FINAL
Remedial Investigation Report Addendum
Former 15 Skeet Ranges
Kingman Ground-to-Ground Gunnery Range
Kingman, Mohave County, Arizona
Formerly Used Defense Site (FUDS) project No. J09AZ0412-01

USACE Contract No. W912PL-17-C-0006

Prepared for:

United States Army Corps of Engineers
Los Angeles District

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ABBREVIATIONS AND ACRONYMS

mg/kg	milligrams per kilograms
µg/kg	micrograms per kilogram
µg/dl	micrograms of lead per deciliter of blood
ADEQ	Arizona Department of Environmental Quality
Ahtna	Ahtna Engineering Services
APN	Assessor's Parcel Number
bgs	below ground surface
BLL	blood lead level
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	chemicals of potential concern
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DU	Decision Unit
ECO	Eco & Associates, Inc.
ELAP	Environmental Laboratory Accreditation Program
EPC	Exposure point concentrations
Eurofins TestAmerica	Eurofins Environment TestAmerica Laboratories, Inc.
FCRF	Field Change Form Request
FUDS	Formerly Used Defense Site
FS	Feasibility Study
GC/MS	gas chromatography/mass spectrometry
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GTG	Ground-to-Ground
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
ILCR	Incremental lifetime cancer risk
ISM	incremental sampling method
ISM-2	updated ISM manual
ITRC	Interstate Technology & Regulatory Council
MC	munitions constituent
MRS	Munitions Response Site
NAD 83	North American Datum of 1983
NAVD 88	North American Vertical Datum of 1988
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NOREAS	NOREAS, Inc.
PAHs	polycyclic aromatic hydrocarbons

Parsons	Parsons Infrastructure and Technology Group, Inc.
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Systems Manual
RI	Remedial Investigation
ROE	right-of-entry
RSL	Residential Screening Level
SI	Site Inspection
SIM	selected ion mode
SOP	standard operating procedure
SRLs	Soil Remediation Levels
SU	Sampling Unit
TCRA	Time-Critical Removal Action
UCL	upper confidence limit
USACE	United States Army Corps of Engineer
USEPA	United States Environmental Protection Agency

1 INTRODUCTION

This document is an addendum to the *Final, Remedial Investigation (RI) Report, Former 15 Skeet Ranges, Kingman Ground-to-Ground Gunnery Range, Kingman, Mohave County, Arizona,* dated June 2021. The Final RI documented the field work performed between January 15, 2019 to October 31, 2019 and results of skeet fragments and lead shot pellets observations and incremental sampling method (ISM) soil sampling for 60 Assessor's Parcel Number (APN; parcels), located within the Former 15 Skeet Ranges, Kingman ground-to ground (GTG) Gunnery Range in Kingman, Mohave County, Arizona (Site). Field work, including geophysical surveying, reconnaissance and visual observation of residual War II clay pigeons (skeet) fragments/debris and lead shot pellets, and ISM (ITRC, 2012, 2020) soil sampling at each parcel, was completed to characterize the environmental conditions and soil media, and to determine the nature and extent of potentially hazardous substances [metals (antimony, copper, lead and zinc) and polycyclic aromatic hydrocarbons (PAHs)]. The sampling results from the 60 parcels investigated during the 2019 RI, as well as the 55 parcels selected for Time Critical Removal Action (TCRA) implemented by Eco and Associates, Inc. (ECO) in April and May 2013 and Ahtna Engineering Services (Ahtna) from October 2013 to July 2014, and the 66 RI parcels investigated between December 2014 and February 2017 by ECO, were used as inputs for exposure area determinations, and evaluated in the Human Health Risk Assessment (HHRA) included with the Final RI (NOREAS, 2021).

This RI Addendum Report (Report) prepared by NOREAS, Inc. (NOREAS) is to document the additional investigation activities conducted at 30 additional parcels and one easement area, between January 2020 and April 2021 within the Former 15 Skeet Ranges area. The sampling results were used to characterize the environmental conditions and soil media at the RI Addendum investigated parcels and easement areas, and to incorporate the RI Addendum results with an updated HHRA (NOREAS, 2021), to estimate the potential health impacts associated with the contaminants detected in soil.

This Report has been prepared on behalf of the United States Army Corps of Engineers (USACE), Los Angeles District, under the Contract No. W912PL-17-C-0006. Under the contract, NOREAS is to provide environmental support for the continuation and completion of a RI, including risk

assessment at the Former Skeet Range Munitions Response Site 03 (MRS03[1] Site or the Site) (Figure 1-1). The work conducted during the RI Addendum followed the general procedures outlined in the approved project *Final Remedial Investigation (RI) and Feasibility Study (FS) Work Plan* (Work Plan), (ECO, 2014), as amended by the Final Quality Assurance Project Plan (QAPP) Addendum No. 1 (NOREAS, 2018), approved by USACE and Arizona Department of Environmental Quality (ADEQ) in September 2018.

The contract work falls under the Defense Environmental Restoration Program (DERP) and MRS03 Site, a Formerly Used Defense Site (FUDS) project No. J09AZ0412-01. The project work is conducted under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). All activities during the phases of field work were conducted in compliance with USACE requirements.

This RI Addendum Report documents the results of 30 parcels and one easement, including seven resampled[2] and three further sub-divided parcels[3] reported in the RI.

In this RI Addendum to the Final RI (NOREAS, 2021), relevant figures and tables have been updated to include the 30 RI Addendum parcels and one easement and their respective investigated results. The HHRA for RI Addendum parcels and easement is included as Appendix A. This Report supplements the Final RI (NOREAS, 2021) to document the additional investigative RI Addendum activities and results, toward the overall assessment of current conditions at the Former 15 Skeet Ranges GTG Gunnery Range.

This RI Addendum Report also includes the following appendices:

[1] The Site was originally designated as part of MRS 03. Subsequent to the Site Inspection (SI) (Parsons Infrastructure and Technology Group, Inc. [Parsons], 2011), the Site was redesignated in USACE records as a small portion of MRS01. However, due to legacy and report consistency considerations, sampling records and reports continued to refer to the Site under the MRS03 name.

[2] Seven parcels (APN 324-04-558, APN 324-04-668, APN 324-05-265, APN 324-05-267, APN 324-37-017, APN 324-39-020, and APN 324-05-263A) with rejected data from 2019 RI sampling activities, were resampled during the RI Addendum.

[3] Due to their areal extent, parcels APN 310-21-063(A-K), 310-21-078(A-N), 310-38-002(A-Q), 310-40-005(A-O) and Thompson easement(A-Q), were sub-divided into sub-parcels for sampling.

- **Appendix A** Updated Human Health Risk Assessments (HHRAs) – includes HHRA results for RI Addendum parcels and easement, including individual parcels, sub-parcels and subdivision of easement.
- **Appendix B** Data Quality Summary Report– describes the quality and usability of analytical data collected for the RI Addendum activities.

Attachment 1 to this Report includes individual RI Addendum parcel reports along with the field logs, Global Positioning System (GPS) survey results, photographs, laboratory analytical reports, and data validation reports.

2 REMEDIAL INVESTIGATION APPROACH

This section presents a summary of the remedial investigation approach for the RI Addendum.

2.1 FIELD INVESTIGATION APPROACH

Field work was performed in accordance with the Work Plan (ECO, 2014) and Final QAPP Addendum No. 1 (NOREAS, 2018). RI Addendum activities focused on:

1. Continuing the completion of remedial investigation of properties/parcels started by ECO in 2013 (ECO, 2017) and NOREAS (NOREAS, 2021)
2. Including properties/parcels that extended beyond the initial 284 parcels (based on the 2017 site reconnaissance surveillance);
3. Performing field activities at properties/parcels for which right of entries (ROEs) were granted; and
4. Incorporating adjoining parcels that were located next to parcels impacted by PAHs and/or metals above respective screening levels (NOREAS, 2018). In these instances, bordering parcels were added to the list of parcels proposed for sampling, and a ROE for sampling was pursued.

Based on these criteria, RI Addendum field investigation activities were completed at 30 parcels and Thompson easement [Thomp (A through Q)], including four sub-parcels [APN31021063(A through K), APN31021078(A through N), APN31038002 (A through Q), APN31040005 (A through O)] between January 21, 2020, and April 8, 2021. Table 2-1 tabulates the list of parcels evaluated and depicted in Figure 2-1.

As discussed in the Final QAPP Addendum No. 1 (NOREAS, 2018), the sampling approach was designed to evaluate chemicals of potential concern (COPCs) on a parcel-by-parcel basis. Each parcel sampled was identified by a unique APN, with considered decision units (DUs): DU-1 [surface (0 to 2 inches)], DU-2 [subsurface (0 to 1-foot)], and DU-3 [subsurface (1-foot to 2 feet)].

The field investigative method was based on visual observation of skeet fragments and laboratory soil analytics for inorganic constituents (metals) and organic constituents (PAHs).

The soil sampling focused on assessing the potential presence of COPCs based on past uses/activities for the Site, results of previous investigations, and observations made in the field. Soil samples were collected, combined, processed, and subsampled according to ISM using Interstate Technology & Regulatory Council (ITRC) guidelines (ITRC, 2020). Typically, soil samples were collected from three distinct depth intervals [e.g., surface (0 to 2 inches) and subsurface (0 to 1-foot below ground surface (bgs) and 1-foot to 2 feet bgs)], in triplicate at all parcel and/or sub-parcel locations. Soil samples were collected from additional depth intervals (i.e., 2 feet to 3 feet bgs, 3 feet to 4 feet bgs, 4 feet to 5 feet bgs, and 5 feet to 6 feet bgs) at parcels where there were indications of deeper impacts.

As discussed in the QAPP Addendum No. 1, the extent of COPCs was assessed with the updated screening values to determine if the vertical extent of contamination was defined by the RI Addendum sampling. As stated in the Draft Final RI, the updated screening values were based on the modification of Arizona Soil Remediation Levels (SRLs) to reflect changes in the toxicity values for PAHs by United States Environmental Protection Agency (USEPA, 2020).

2.2 LABORATORY ANALYTICAL PROGRAM

All soil samples collected during the RI Addendum were submitted for analysis to Eurofins Environment TestAmerica Laboratories, Inc. (Eurofins TestAmerica) in Arvada, Colorado (Eurofins TestAmerica-Denver). Eurofins TestAmerica-Denver holds current Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) accreditation for the analytical methods used. Samples were submitted for ISM processing and analysis of PAHs by United States Environmental Protection Agency (USEPA) Method 8270C Selected Ion Mode (SIM), and for the metals, including antimony, copper, lead, and zinc by USEPA Method 6010B. COPCs were reported in milligrams per kilogram (mg/kg) for metals and micrograms per kilogram (µg/kg) for 16 PAHs (i.e., 2-methylnaphthalene, acenaphthene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene).

Following the Final QAPP Addendum No. 1 (NOREAS, 2018), the analytical data was provided by the laboratory in hard copy and electronic report formats containing raw instrument and method

quality control (QC) data to allow staged validation levels. Copies of the laboratory analytical reports are provided in Attachment 1 as a part of the parcel reports.

All of the analytical data generated during the RI Addendum were subject to third-party, independent validation by Synectics in Sacramento, California. Data validation process and results are detailed in Appendix B. Copies of the validation reports are included in Attachment 1 as a part of the RI Addendum parcel reports. The analytical laboratory and third-party validation reports were reviewed for QC issues identified during the analytical process and data usability.

2.2.1 Data Analysis Methodology

Calculation of 95% upper confidence limit (UCL) concentrations of soil sample results was performed for each parcel using the USEPA ProUCL 5.1.002 software (USEPA, 2015). The 95% UCL for all ISM samples was determined using the Chebyshev method, which is recommended for use in ISM-based samples, as this method provides a conservative estimate of the UCL (ITRC, 2020). The Chebyshev method is based on non-parametric (no distributional) assumptions of the data set.

For risk screening purposes, sample results using the 95% UCL concentrations are used as inputs for exposure area determinations in risk assessment. The ProUCL statistical summary and the 95% UCL values are provided in Section 4. In cases where an analyte was not detected in a soil sample, a result equal to one-half of the analyte reporting limit was assumed for 95% UCL determinations.

Data validation was performed in accordance with DoD Quality Systems Manual (QSM) version 5.1, DoD General Data Validation Guidelines (DoD, 2017), DoD Data Validation Guidelines Module 1 (DoD, 2020a), and blank data evaluation for metals analysis based on the DoD Module 2: Data Validation Procedure for Metals by ICP-OES (SW-846 6010) (DoD, 2020b), Final QAPP Addendum No. 1 (NOREAS, 2018), Field Change Form Request (FCRF)-001 (NOREAS, 2019a), and FCRF-002 (NOREAS, 2019b). The overall data quality was determined based on the analytical results generated for field and laboratory quality assurance/quality control (QA/QC) samples during this project. QA/QC for field activities was ensured through standardized sampling methods, rigorous documentation, and the collection of field QC samples as described in the Final QAPP Addendum No. 1 (NOREAS, 2018). All laboratory analytical data were reviewed and

validated by Synectics in Sacramento, California. A complete summary of the QC review is provided in Appendix B (Data Quality Summary Report).

3 SUMMARY OF RI ADDENDUM FIELD ACTIVITIES

Between January 21, 2020 and April 8, 2021, 30 parcels and one easement area, including the four subdivided parcels and easement, were investigated as part of the RI Addendum. The following subsections provide a summary of the field activities completed as part of the RI Addendum. GPS Survey data by parcel is provided in Attachment 1 as a part of the RI Addendum parcel reports. Field activities were noted in a field logbook and documented on each parcel field log provided in the respective parcel reports in Attachment 1. Pre-field, during the field, and post-field activity photographs were taken at each parcel and provided in Attachment 1 as a part of the parcel reports.

3.1 RIGHT OF ENTRY AND UTILITY CLEARANCE

Prior to any subsurface field activities, USACE secured ROEs granting access to the APNs/properties to perform RI Addendum activities. ROEs were signed by property owners or representatives and provided to NOREAS by USACE.

Additionally, before performing soil sampling activities, utility clearances were conducted. At least 48 hours prior to field work, Arizona 811 was notified of planned activities, and dig permits were obtained. Geophysical evaluations were also performed by Safe Site Utility Services, LLC, to identify other potential subsurface utilities at each of the parcels.

3.2 SITE DEMARCATION AND VISUAL SCREENING FOR SKEET AND LEAD SHOT

Between January 21, 2020 and April 8, 2021, as a part of the RI Addendum field investigation, parcels were delineated using high-visibility sampling whiskers to identify the corners of each parcel's sampling grid. Once parcels/sub-parcels[4]/DUs were delineated and staked, the DUs were then subdivided into 10 approximately equally sized grid sampling units (SUs). After demarcation was complete, observations for clay pigeon fragment evidence at each parcel and within each SU at the ground surface and then again during subsurface field activities were recorded in a field logbook, and on each parcel field log. The clay pigeon fragment locations were GPS surveyed and photographed, if observed.

[4] Due to their areal extent, parcels APN 310-21-063(A-K), APN 310-21-078(A-N), APN 310-38-002(A-Q), APN 310-40-005(A-O) and Thompson easement(A-Q), were divided into sub-parcels for sampling.

Clay pigeons were discerned from other debris by their distinct black color, circular-like patterns or raised printed text, and their ability to leave a distinct black "streak" when rubbed against a hard, rough surface. Skeet fragment and/or lead shot pellet detection, their location within each parcel by SUs, size of skeet fragment, GPS survey point, and photographs are detailed in the respective parcel reports included as Attachment 1. Visual observations of skeet fragments observed on the surface and/or subsurface are discussed in Section 4.1.1.

3.3 ISM SOIL SAMPLING

Sample collection followed the same protocols and methodology as used for soil sample collection during the 2019 RI sampling events. Detailed procedures used were developed using guidelines from the USACE guidelines (USACE, 2009), the ITRC for *Environmental Management at Operating Outdoor Small Arms Firing Ranges* (ITRC, 2005), and ITRC *Technical and Regulatory Guidance: Incremental Sampling Methodology Update ISM-2* (ITRC, 2020). ISM soil sample collection procedures used during the RI Addendum at each parcel are summarized below.

Following ISM grid delineation, a systematic random sampling approach was used to collect the surface soil samples (0 to 2 inches), and subsurface soil samples (0 to 1-foot, and 1-foot to 2 feet). The location of each borehole cored was GPS recorded (Attachment 1).

The 30 parcels, including the four sub-parcels [(APN 310-21-063(A-K), APN 310-21-078 (A-N), APN 310-38-002(A-Q), and APN 310-40-005(A-O)] and subdivided easement [Thompson easement (ThompA through ThompQ)], sampled between January 21, 2020 and April 8, 2021, are listed in Table 2-1 and depicted in Figure 2-1.

Phase II Sampling

During the advancement of soil borings, skeet fragments were observed at 2 feet bgs at two (2) sub-divisions of Thompson easement (ThompK, and ThompN). Therefore, subsurface (2 feet to 3 feet bgs; DU-4) soil samples and subsurface (3 feet to 4 feet bgs: DU-5) soil samples were collected. Sample collection at these deeper depths was conducted in a similar manner as described for the 0 to 1-foot and 1-foot to 2 feet bgs intervals, properly labeled and preserved on ice in coolers, submitted to Eurofins TestAmerica-Denver, and analyzed for USEPA Method 8270C SIM and USEPA Method 6010B. Results of the deeper sampling depth intervals from the parcel and easement are discussed in Section 4.

As discussed before, when analytical results from the 1-foot to 2 feet depth intervals indicated above screening levels for PAHs and/or metals, as a part of Phase II sampling, parcels were sampled at deeper depth intervals. The following additional parcels required resampling during the sampling activities completed between January 21, 2021 and April 8, 2021:

- Parcel with APN 32436017 indicated PAHs above screening levels during Phase I sampling from analytical results reported from the 1 to 2 feet depth interval. Therefore, this parcel was sampled at depth intervals from 2 to 3 feet bgs and 3 feet to 4 feet bgs during Phase II sampling.

- Subdivided Thompson easement 'ThompJ', 'ThompK' 'ThompL', and 'ThompM' indicated PAHs above screening levels during Phase I sampling from analytical results reported from the 1 to 2 feet depth interval. Therefore, was sampled at depth intervals from 2 to 3 feet bgs and 3 feet to 4 feet bgs during Phase II sampling.

- Due to analytical soil sample results from the 1-foot to 2 feet, 2 feet to 3 feet, and 3 feet to 4 feet depth intervals with PAHs above screening levels, subdivided Thompson easement 'ThompJ', 'ThompK' 'ThompL', and 'ThompM' required additional, deeper subsurface sampling from 4 feet to 5 feet bgs and 5 feet to 6 feet bgs sample depth intervals.

3.4 LABORATORY ANALYSES AND DATA VALIDATION

Samples were analyzed for PAHs by USEPA Method 8270C SIM and for metals (antimony, copper, lead, and zinc) by USEPA Method 6010B. Soil samples received at the laboratory were dried, mechanically ground, and incrementally sampled, followed by digestion according to laboratory standard operation procedure (SOPs) and USEPA Method 6010B. The soil samples were processed through the same ISM procedure except for the grinding step, as documented via FCRF-001 and FCRF-002. Following ISM, samples were extracted and analyzed according to USEPA Method 8270C using gas chromatography/mass spectrometry (GC/MS) in SIM mode. COPCs were reported in mg/kg for metals and µg/kg for PAHs. A data quality summary is presented in Appendix B.

Quality control exceedances are discussed in detail in Appendix B. Relevant data validation qualifiers (i.e., "J"; "U"; and "UJ") are defined in the data validation reports provided in

Attachment 1 as a part of the respective RI Addendum parcel reports. The quality and usability of analytical data collected for RI Addendum activities are discussed in Appendix B.

3.5 RESTORATION

Boreholes from each RI Addendum parcel investigated were backfilled with soil cuttings from the same boring and compacted by hand. The ground surface was smoothed to match the existing grade. Temporary Site survey markers used for sampling delineation at each parcel were removed. Parcel restoration photographs were taken at each parcel and the location of each borehole cored was GPS recorded. provided in Attachment 1 as a part of the parcel reports. Photographs and GPS data are provided in Attachment 1 as a part of the respective RI Addendum parcel reports.

3.6 LAND SURVEYS

Parcel corner boundaries, SU boundaries, location of skeet fragments and/or lead shotgun pellets, and location of subsurface soil borings were surveyed at each parcel using a Trimble Geo 7X GPS receiver. Decimeter level accuracy level position was performed using the Global Navigation Satellite System (GNSS) using the NOREAS SOP. In addition, the cored borehole locations were recorded using the GNSS device with a corresponding borehole identifier. All notations, including any clay pigeon fragments within the boreholes, were accurately reported. The total surface area of each parcel boundary was also calculated by using the area calculation tool on the Geo7X GPS receiver based on the positions of the corners of the parcel, as surveyed. Post-collection differential corrections were applied to the GPS data using Trimble Pathfinder™ software. GPS positions and points recorded by parcel, including skeet fragment locations and boreholes, are presented in the respective parcel reports in Attachment 1.

For the location of the RI Addendum properties, horizontal coordinates were provided in US survey feet within State Plane Coordinate System based on the North American Datum of 1983 (NAD 83) reference. Vertical coordinates were reported in US feet elevations based on the North American Vertical Datum (NAVD 88) of 1988 reference.

4 INVESTIGATION RESULTS

This section provides the results of the RI Addendum activities conducted between January 2020 and April 2021, at the Site.

- A total of 1,013 soil samples were collected from 30 parcels and one easement during the RI Addendum phase, between January 21, 2020, and April 8, 2021. Of these, due to size, three (3) of the parcels and the easement were subdivided into sub-parcels APN 310-21-063(A-K), APN 310-21-078(A-N) APN 310-38-002(A-Q), APN 310-40-005(A-O), and Thompson Easement was divided into Thomp (A-Q). Additionally, seven (7) of the parcels were resampled due to rejected data collected during RI activities between January 15, 2019 and October 31, 2019.

The following subsections include a discussion of visual observation of skeet fragment debris and lead shot pellets, and soil sampling results.

4.1 VISUALLY-OBSERVED SKEET AND MUNITIONS COMPONENTS

Clay pigeon fragments were identified visually by 1) distinct black color; 2) circular-like patterns or raised printed text on black pieces; 3) distinct black "streak" left when rubbed against a hard rough surface and 4) proclivity to be found in "cluster" of several black fragments. Figure 4-1 depicts visually observed skeet fragments for all RI and RI addendum parcels and easement investigated.

4.1.1 Skeet Fragment Observations

During the RI Addendum, skeet fragments were visually observed on 8 of the 30 parcels' and on the easement's surface, including the three of the four subdivided parcels [APN 310-21-063(A-K), 310-21-078(A-N), APN 310-38-002(A-Q) and subdivision of Thompson Easement (A-Q)], investigated by NOREAS between January 21, 2020, and April 8, 2021 (Figure 4-1). Skeet fragments were also visually observed on 44[5] of the 60 parcels' surfaces (Figure 4-1), investigated by NOREAS between January 15, 2019, and October 31, 2020, and visually observed on 21 of the

[5] Parcels APN 310-21-063, APN 310-210-078, and APN 310-38-002 were further subdivided during RI Addendum field activities.

66 parcels' surfaces during the RI activities conducted between December 2014 and February 2017 performed by ECO. Surface skeet fragment observations by parcel APNs and SUs are provided in Table 4-1 below. Locations of SUs on each of the 30 parcels and one easement evaluated in this RI Addendum are included in the respective RI Addendum parcel reports (Attachment 1).

Table 4-1 Observation of Surface Skeet Fragments for all RI Parcels and Easement

#	APN #	Street	Street Name	Sample Unit Skeet Observed
1	310-21-063**	*-	E. Thompson Ave.	SU-3 & -6
	310-21-063C***	*-	E. Thompson Ave.	SU-6
	310-21-063E***	*-	E. Thompson Ave.	SU-8
	310-21-063F***	*-	E. Thompson Ave.	SU-3 & SU-5
	310-21-063G***	*-	E. Thompson Ave.	SU-3, -4, -8, -9, & -10
	310-21-063I***	*-	E. Thompson Ave.	SU-8
	310-21-063K***	*-	E. Thompson Ave.	SU-3 & SU-4
2	310-21-078**	*-	E. Thompson Ave.	SU-1, -3, -5, -8, -9, & -10
	310-21-078A***	*-	E. Thompson Ave.	SU-7
	310-21-078G***	*-	E. Thompson Ave.	SU-8 & SU-9
	310-21-078H***	*-	E. Thompson Ave.	SU-5
2	310-21-078K***	*-	E. Thompson Ave.	SU-5
3	310-21-080**	^	E. Thompson Ave.	SU-3, -6, -7, & -8
	310-21-080A**	^	E. Thompson Ave.	SU-10
	310-21-080B**	^	E. Thompson Ave.	SU-10
4	310-38-002D***	^-	E. Thompson Ave.	SU-7
	310-38-002K***	^	E. Thompson Ave.	SU-9
5	324-04-206A**	3910	E. Devlin Ave.	SU-4
6	324-04-208A**	3900	E. Devlin Ave.	SU-8
7	324-04-211C**	3879	E. Shaeffer Ave.	SU-5 through SU-8
8	324-04-211D*	3880	E. Devlin Ave.	DU-1
9	324-04-237A (E)*	3870	E. Devlin Ave.	DU-1
	324-04-237A (W)*	3870	E. Devlin Ave.	DU-1
10	324-04-240*	3850	E. Devlin Ave.	DU-1
11	324-04-241**	3846	E. Devlin Ave.	SU-7, -8 & -9

#	APN #	Street	Street Name	Sample Unit Skeet Observed
12	324-04-242**	3842	E. Devlin Ave.	SU-1 & -5
13	324-04-280**	3845	E. Shaeffer Ave.	SU-6 & -9
14	324-04-282A (E)*	3871	E. Shaeffer Ave.	DU-1
	324-04-282A (W)*	3871	E. Shaeffer Ave.	DU-1
15	324-04-484*	3860	E. Hearne Ave.	DU-1
16	324-04-526**	3845	E. Devlin Ave.	SU-1, -5, -6, & -7
17	324-04-527**	3849	E. Devlin Ave.	SU-7
18	324-04-549A***	3970	E. Hearne Ave.	SU-8
19	324-04-550**	3960	E. Hearne Ave.	SU-1, -2, -3, -5, -7, -8, & -10
20	324-04-552A**	3950	E. Hearne Ave.	SU-9
21	324-04-553**	3946	E. Hearne Ave.	SU-7, -9, and -10
22	324-04-570*	3883	E. Devlin Ave.	DU-1
23	324-04-582**	3945	E. Devlin Ave.	SU-8
24	324-04-625**	3990	E. Ryan Ave.	SU-5
25	324-04-629A**	3966	E. Ryan Ave.	SU-9
26	324-04-638**	3920	E. Ryan Ave.	SU-3, -4, -7, -8, and -9
27	324-04-639**	3916	E. Ryan Ave.	All 10 SUs
28	324-04-640**	3910	E. Ryan Ave.	SU-1 through SU-9
29	324-04-653*	3899	E. Hearne Ave.	DU-1
30	32404655A (E)* 32404655A (W)*	3905	E. Hearne Ave.	DU-1
31	324-04-658**	3925	E. Hearne Ave.	SU-1 through SU-6 & -9
32	324-04-659**	3929	E. Hearne Ave.	SU-7, -8, & -9
33	324-04-665**	3959	E. Hearne Ave.	SU-10
34	324-04-666**	3971	E. Hearne Ave.	SU-1, -4, -5, & -7
35	324-04-688**	3860	E. Ryan Ave.	SU-4 & -6
36	324-05-169**	4004	E. Lum Ave.	SU-4 & -7
37	324-05-172**	3990	E. Lum Ave.	SU-3, -4, and -5
38	324-05-174**	3974	E. Lum Ave.	SU-6, -7, -8, -9, & -10
39	324-05-176**	3966	E Lum Ave.	SU-1 through SU-6
40	324-05-177**	3960	E. Lum Ave.	SU-1 through SU-7
41	324-05-178**	3956	E. Lum Ave.	SU-1 through SU-9

#	APN #	Street	Street Name	Sample Unit Skeet Observed
42	324-05-194B (E)*	3876	E. Lum Ave.	DU-1
	324-05-194B (W)*	3876	E. Lum Ave.	DU-1
43	324-05-206A**	^	E. Ryan Ave.	SU-2, -5, & -6
44	324-05-212**	3959	E. Ryan Ave.	SU-1 & -6
45	324-05-269**	3986	E. Thompson Ave.	SU-3 and SU-8
46	324-05-276A (E)* 324-05-276A (W)*	3950	E. Thompson Ave.	DU-1
47	324-05-289**	3886	E. Thompson Ave.	SU-2 & -7
48	324-05-295*	3887	E. Lum Ave.	DU-1
49	324-05-296*	3895	E. Lum Ave.	DU-1
50	324-05-297*	3899	E. Lum Ave.	DU-1
51	324-05-308A*	3955	E. Lum Ave.	DU-1
52	324-36-008**	3930	E. Lass Ave.	SU-1, SU-9, & SU-10
52	324-36-011**	3942	E. Lass Ave.	SU-4 & -9
54	324-36-012**	3946	E. Lass Ave.	SU-1, -5, -6, -7, & -10
55	324-36-014*	3954	E. Lass Ave.	DU-1
56	324-36-015*	3958	E. Lass Ave.	DU-1
57	324-36-017***	3966	E. Lass Ave.	SU-5 through SU-10
58	324-36-019**	3974	E. Lass Ave.	SU-2, -3, -6, -7, -8, & -9
59	324-36-020**	3978	E. Lass Ave.	SU-3 through SU-9
60	324-36-030***	3943	E. Lass Ave.	SU-7 & SU-8
61	324-39-006*	3960	E. Snavely Way	DU-1
62	324-39-014*	3936	E. Snavely Cir.	DU-1
63	324-39-015*	3930	E. Snavely Plz	DU-1
64	324-39-016*	3928	E. Snavely Plz	DU-1
65	324-39-020***	3914	E. Snavely Ave.	SU-2 & SU-8
66	324-39-031**	3955	E. Snavely Ave.	SU-4 through SU-10
67	324-39-032*	3951	E. Snavely Ave.	DU-1
68	324-39-036**	3935	E. Snavely Ave.	SU-3 through SU-8
69	324-39-037**	3931	E. Snavely Ave.	SU-2 through SU-8
70	324-39-038***	3927	E. Snavely Ave.	SU-2 through SU-6
71	Thompson Easement G	^-	Thompson Ave.	SU-5

#	APN #	Street	Street Name	Sample Unit Skeet Observed
	Thompson Easement H	^-	Thompson Ave.	SU-1 through SU-10
	Thompson Easement I	^-	Thompson Ave.	SU-1 through SU-6, SU-8 & SU-10
	Thompson Easement J	^-	Thompson Ave.	SU-1, SU-5, SU-8, & SU-10
	Thompson Easement K	^-	Thompson Ave.	SU-1 through SU-6 & SU-9
	Thompson Easement L	^-	Thompson Ave.	SU-1 through SU-6 SU-8 through SU-10
	Thompson Easement M	^-	Thompson Ave.	SU-1 through SU-5
	Thompson Easement N	^-	Thompson Ave.	SU-1, SU-6, SU-8
	Thompson Easement O	^-	Thompson Ave.	SU-1 through SU-5
	Thompson Easement P	^-	Thompson Ave.	SU-1 through SU-3
	Thompson Easement Q	^-	Thompson Ave.	SU-1 through SU-5

^ Not applicable as the parcel is an open area.
* RI (December 2014 – February 2017)
**RI (January 2019 – October 2019)
***RI Addendum (January 2020 – April 2021)
(E) east section of subdivided parcel
(W) west section of subdivided parcel

During the RI Addendum, skeet fragments were visually observed in the subsurface of 1 of the 30 parcels' and in the easement subsurface. Skeet fragments were also visually observed in the subsurface during sampling in 8 of the 60 RI parcels conducted between January to October 2019, and in 5 of the 66 RI parcels investigated between December 2014 to February 2017. Subsurface skeet fragment observations by parcel are provided in Table 4-2 below.

Table 4-2 Observation of Subsurface Skeet Fragments For All RI Parcels and Easement

#	APN	Street	Street Name	Depth (feet)
1	310-21-080A**	^	E. Thompson Ave.	0 – 1
2	324-04-237A (E)*	3870	E. Devlin Ave.	0-1
	324-04-237A (W)*	3870	E. Devlin Ave.	3 – 4 and 4– 5
3	324-04-640 **	3910	E. Ryan Ave.	0 – 1 and 1- 2
4	324-05-296*	3895	E. Lum Ave.	0-1
5	324-36-012 **	3946	E. Lass Ave.	0 - 1

#	APN	Street	Street Name	Depth (feet)
6	324-36-014*	3954	E. Lass Ave.	0-1
7	324-36-015*	3958	E. Lass Ave.	3 – 4 and 4– 5
8	324-36-017***	3966	E. Lass Ave.	0 – 1 and 2– 3
9	324-36-019 **	3974	E. Lass Ave.	0 – 1 and 1-2
10	324-36-020 **	3978	E. Lass Ave.	0 – 1 and 1- 2
11	324-39-031 **	3955	E. Snavely Ave.	0 – 1, 1 – 2, 2 – 3, 3 – 4, and 4 – 5
12	324-39-032*	3951	E. Snavely Ave.	0-1
13	324-39-036 **	3935	E. Snavely Ave.	0-1
14	324-39-037 **	3931	E. Snavely Ave.	0-1
15	Thompson Easement H***	^-	Thompson Ave.	0 – 1
	Thompson Easement I***	^-	Thompson Ave.	0 – 1
	Thompson Easement J***	^-	Thompson Ave.	0 – 1 and 2– 3
	Thompson Easement K***	^-	Thompson Ave.	0 – 1, 2– 3, and 4 – 5
	Thompson Easement L***	^-	Thompson Ave.	0 – 1 and 2– 3
	Thompson Easement M***	^-	Thompson Ave.	0 – 1 and 1- 2
	Thompson Easement N***	^-	Thompson Ave.	0 – 1

^- Not applicable as the parcel is an open area
* RI (December 2014 – February 2017)
** RI (January 2019 – October 2019)
*** RI Addendum (January 2020 – April 2021)
(E) east section of subdivided parcel
(W) west section of subdivided parcel

Of the 39 parcels and one easement investigated outside of the original 284 parcels identified for RI, 18 of these parcels has visually observed clay pigeons/skeet fragments. Parcels located outside of the initial 284 parcels are listed in Table 4-3 below by APN, street number and address, and whether skeet fragments were observed.

Table 4-3 Sampled Parcels Outside of Initial 284 Parcels and Observation of Skeet Fragments

#	APN	Street #	Street Address	Skeet Observed
1	310-21-063**	*-	E. Thompson Ave.	Yes
2	310-21-078**	*-	E. Thompson Ave.	Yes
3	310-21-080	*-	E. Thompson Ave.	Yes
	310-21-080A	*-	E. Thompson Ave.	Yes

#	APN	Street #	Street Address	Skeet Observed
1	310-21-063**	*-	E. Thompson Ave.	Yes
2	310-21-078**	*-	E. Thompson Ave.	Yes
	310-21-080B	*-	E. Thompson Ave.	Yes
4	310-38-002	4015	E. Thompson Ave.	Yes
5	310-04-082B	3800	E. Shaeffer Ave.	No
6	324-04-126	3970	E. Shaeffer Ave.	No
7	324-04-127	3966	E. Shaeffer Ave.	No
8	324-04-131	3946	E. Shaeffer Ave.	No
9	324-04-277A	3825	E. Shaeffer Ave.	No
10	324-04-487	3846	E. Hearne Ave.	No
11	324-04-550	3960	E. Hearne Ave.	Yes
12	324-04-552A	3950	E. Hearne Ave.	Yes
13	324-04-582	3945	E. Devin Ave.	Yes
14	324-04-624	3996	E. Ryan Ave.	No
15	324-04-625	3990	E. Ryan Ave.	Yes
16	324-04-668	3979	E. Hearne Ave.	No
17	324-04-688	3860	E. Ryan Ave.	Yes
18	324-04-727	3831	E. Hearne Ave.	No
19	324-04-730	3845	E. Hearne Ave.	No
20	324-05-106	3846	E. Lum Ave.	No
21	324-05-107	3842	E. Lum Ave.	No
22	324-05-166A	4026	E. Lum Ave.	No
23	324-05-168	4010	E. Lum Ave.	No
24	324-05-169	4004	E. Lum Ave.	Yes
25	324-05-218A	3991	E. Ryan Ave.	No
26	324-05-263A	4016	E. Thompson Ave.	No
27	324-05-265	4008	E. Thompson Ave.	No
28	324-05-289	3886	E. Thompson Ave.	Yes
29	324-05-290	3880	E. Thompson Ave.	No
30	324-27-024	3860	E. Snavely	No
31	324-36-008	3930	E. Lass Ave.	Yes
32	324-36-011	3942	E. Lass Ave.	Yes

#	APN	Street #	Street Address	Skeet Observed
1	310-21-063**	*-	E. Thompson Ave.	Yes
2	310-21-078**	*-	E. Thompson Ave.	Yes
33	324-36-012	3946	E. Lass Ave.	Yes
34	324-37-016	3964	E. Packard Ave.	No
35	324-37-017	3968	E. Packard Ave.	No
36	324-39-020	3914	E. Snavely Ave.	Yes
37	324-39-036	3935	E. Snavely Ave.	Yes
38	324-39-037	3931	E. Snavely Ave.	Yes
39	324-39-038	3927	E. Snavely Ave.	Yes
40	Thompson Easement***			Yes

*- Not applicable as the parcel is an open area

** Part of subdivided parcel (310-21-063 A-C and 310-21-078 G-K are outside the 284 properties

*** Part of subdivided Thompson Easement (A-G) is outside of the 284 properties

4.1.2 Lead Shot Pellets

No munitions constituent (MC; lead shot pellets) affiliated with the Former 15 Skeet Ranges, Kingman GTG Gunnery Range military munitions use were observed at the Site during the RI or for this RI Addendum.

4.2 SOIL SAMPLING RESULTS – PAHs and Metals

Soil samples were analyzed for PAHs by USEPA Method 8270C- SIM. Table 4-4 summarizes PAH concentrations for the RI samples collected between January 21, 2020 and April 8, 2021. Soil samples were analyzed for metals (antimony, copper, lead, and zinc) by USEPA Method 6010B. Table 4-5 summarizes metals concentrations for the RI samples collected between January 21, 2020 and April 8, 2021.

Between January 21, 2020 and April 8, 2021, 1,013 soil samples collected from 30 parcels and one easement during the RI Addendum. Of these, due to size, four (4) of the parcels, and the easement were subdivided into sub-parcels APN 310-21-063(A-K), APN 310-21-078(A-N) APN 310-38-002(A-Q), APN 310-40-005(A-O), and Thompson Easement (A-Q). Additionally, seven (7) of the parcels were resampled due to rejected data collected during RI activities between January 15, 2019 and October 31, 2019 (Tables 4-4 and 4-5).

4.3 HUMAN HEALTH RISK ASSESSMENT

Potential health impacts associated with the contaminants detected in soil, HHRAs were prepared for each of the parcels investigated by NOREAS from January 15, 2019 to October 31, 2019, for parcels previously investigated by from 2014 to 2017 (NOREAS, 2021), and for RI addendum parcels and easement investigated from January 21, 2020 to April 8, 2021 (Appendix A). This section summarizes the HHRA findings. Additional details of the HHRA are presented in the Final RI Report (NOREAS, 2021), and Appendix A.

4.3.1 Hazard Identification

The primary concern at the Site is the abundant, but scattered clay pigeon debris. World War II-era clay pigeons were constructed with coal tar pitch, containing PAHs. Metals (antimony, copper, lead, and zinc) are associated with shotgun pellets.

At each parcel assessed, a constituent (PAH compound or metal) detected at least once was identified as a COPC and evaluated for potential health impacts.

4.3.2 Exposure Assessment

Currently, the Site is almost completely developed for residential purposes. Each of the parcels represent residential areas, therefore, the default residential exposure scenario of the USEPA (USEPA, 2020) was evaluated for this HHRA.

The default USEPA residential exposure scenario assumes a long-term resident and assumes a resident spends most, if not all, of the day at home. The resident is assumed to be exposed to contaminants via the following pathways: incidental ingestion of soil, dermal contact with soil, inhalation of volatiles and fugitive dust.

Exposure assessment required the use of USEPA Residential Screening Levels (RSLs) (USEPA, 2021)[6], exposure point concentrations (EPCs), and risk quantification (See Section 4.3.3 and Appendix A). To derive the EPCs, the 95 % UCL, based on the Chebyshev inequality method, was calculated using the USEPA ProUCL 5.1.002 software (USEPA, 2015). EPCs were estimated for two intervals, 0-1-foot interval, which describes potential current exposures at the parcels, and all

[6] Previous evaluations in the RI utilized the 2020 version of the RSLs. A comparison was made between 2020 and 2021 RSL values and no differences were identified for the COPCs.

depths, which is descriptive of potential future exposures where significant excavation and redistribution of the contaminants can occur (Appendix A; exhibit B [0-1-foot interval] and exhibit C [all depth interval]).

4.3.3 Risk Quantification

To quantify potential health risks, the USEPA RSLs were used to evaluate carcinogenic and noncarcinogenic health effects, as they are based on human health risk. The RSLs correspond to either a one in a million (10^{-6}) risk level for carcinogens or a Hazard Index (HI) of 1 for non-carcinogens. Carcinogenic COPCs are those that are known or suspected of causing cancer. Cancer effects are evaluated based on the assumption that any level of exposure to a carcinogenic compound can cause an effect. Noncarcinogenic COPCs are those that may result in deleterious health effects, other than cancer (Appendix A).

Environmental exposure to lead can affect multiple organs in the human body, however the nervous system is the mostly affected by lead toxicity. Childhood exposures to lead are of greater impact than adults because of tissue development and a decrease in cognitive performance and functions of the nervous system. To assess potential lead exposures, blood lead levels (BLLs) (i.e., concentration of lead in blood) are considered an indicator. The USEPA identifies a BLL of 10 micrograms of lead per deciliter of blood (µg/dl) as a level of concern. The USEPA has selected a residential 400 mg/kg standard because that is the level at which a child has a 1% to 5% risk of having a blood lead level of 10 µg/dl. A lead index value is calculated for each depth interval evaluated by dividing the EPC of lead by 400 mg/kg. A lead index of 1 or more would indicate a potential for excess exposure.

For parcels investigated from January 2019 to April 2021, risks are evaluated separately using data combined from the surface sampling and 0- to 1-foot depth, and from all-depths (Table 4-6).

4.3.4 Risk Results

The HHRA results are expressed as carcinogenic risk and noncarcinogenic hazard. Carcinogenic risks are expressed in terms of probabilities. That is, a probabilistic expression is calculated to indicate the number of cancers that can be expected within a population (the lower the number the lower the probability). For example, the probability expressed as 1×10^{-5} (10^{-5}) can be read as a probability of cancer of one in 100,000. The risk assessment represents a carcinogenic risk factor

of 10^{-6} for PAHs and using incremental lifetime cancer risk (ILCR) quantified as above 10^{-6} or at or below 10^{-6}.

For noncarcinogens, the indicator calculated is a noncarcinogenic hazard. The hazard is the ratio of the EPC divided by the COPC specific RSL, which is a level believed to be without deleterious health impacts to sensitive subpopulations. A total hazard less than unity, or one, is believed to be without adverse health effects to the most sensitive subpopulations.

The results of the HHRA January 2019 to April 2021 RI parcels and easement are presented in Table 4-6. The HHRA for all parcels sample during RI and RI Addendum (April 2013 to April 2021) are summarized on Figure 4-2. A total of 79 parcels and easement of the 151 RI parcels and easement were quantified with an ILCR above 10^{-6}. The highest ILCR ($5x10^{-4}$) was found at the Thompson Easement L. The presence of skeet fragments was noted on the surface of 71 and in the subsurface of 15 of the 151 RI parcels and easement investigated between December 2014 and April 2021 (Tables 4-1 and 4-2 above, and Figures 4-1 and 4-2).

The Thompson Easement L was also found to have COPC concentrations resulting in non-carcinogenic hazard quotient (HQ) greater than 1 at the 0 to 1-foot interval. All other parcels had noncarcinogenic HQs of 1 or less. Lead concentrations were found to be below the USEPA RSL of 400 mg/kg at all parcels.

4.3.5 Uncertainties and Limitations of the HHRA

Various uncertainties are associated with the results of the HHRA, and are detailed in Appendix A. Significant limitations are associated with sampling; most significantly, samples were not collected beneath homes. As such, changes in land use may expose additional areas containing COPCs. The most prominent limitation of the HHRA is that soil sampling necessarily excluded larger clay pigeon debris (skeet fragments) from chemical analysis. The presence of significant clay pigeon debris at a parcel represents an on-going source of contamination both through direct exposure (ingestion) and the potential to contribute to soil contamination following further weathering/disintegration of this material. Figure 4-2 presents a summary of the results of all RI parcels and easement reported risk factors and overlays visual observations of skeet fragments at a parcel. Observations of skeet fragments are not consistently correlated with the calculated risks for a parcel.

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TABLES

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TABLE 2-1
SUMMARY OF PARCELS SAMPLED DURING RI ADDENDUM (JANUARY 2020 TO APRIL 2021)

Parcel Count	APN	Street #	Street Name	Sampling Dates	Sample Depths (feet)	ISM
1	310-21-063 (A)	--	E Thompson Ave	2/12-13/2020	0,1,2	x 3 (replicates)
	310-21-063 (B)			1/23-24/2020	0,1,2	x 3 (replicates)
	310-21-063 (C)			1/28/2020	0,1,2	x 3 (replicates)
	310-21-063 (D)			1/28-29/2020	0,1,2	x 3 (replicates)
	310-21-063 (E)			1/29/2020	0,1,2	x 3 (replicates)
	310-21-063 (F)			1/30/2020	0,1,2	x 3 (replicates)
	310-21-063 (G)			1/30-31/2020	0,1,2	x 3 (replicates)
	310-21-063 (H)			2/11/2020	0,1,2	x 3 (replicates)
	310-21-063 (I)			2/12-13/2020	0,1,2	x 3 (replicates)
	310-21-063 (J)			2/13/2020	0,1,2	x 3 (replicates)
	310-21-063 (K)			2/13-14/2020	0,1,2	x 3 (replicates)
2	310-21-078 (A)	--	E Thompson Ave.	2/18/2020	0,1,2	x 3 (replicates)
	310-21-078 (B)*			9/15/2020 9/22/2020	0,1,2	x 3 (replicates)
	310-21-078 (C)			2/25/2020	0,1,2	x 3 (replicates)
	310-21-078 (D)			2/26-28/2020	0,1,2	x 3 (replicates)
	310-21-078 (E)*			9/16/2020 9/22/2020	0,1,2	x 3 (replicates)
	310-21-078 (F)			3/3/2020	0,1,2	x 3 (replicates)
	310-21-078 (G)			3/4/2020	0,1,2	x 3 (replicates)
	310-21-078 (H)			3/5-6/2020	0,1,2	x 3 (replicates)
	310-21-078 (I)			9/17/2020	0,1,2	x 3 (replicates)
	310-21-078 (J)			9/17-18/2020	0,1,2	x 3 (replicates)
	310-21-078 (K)			9/21-22/2020 9/30/2020	0,1,2	x 3 (replicates)
	310-21-078 (L)			9/22-23/2020	0,1,2	x 3 (replicates)
	310-21-078 (M)			9/23/2020 9/30/2020	0,1,2	x 3 (replicates)
	310-21-078 (N)			9/24/2020	0,1,2	x 3 (replicates)

TABLE 2-1
SUMMARY OF PARCELS SAMPLED DURING RI ADDENDUM (JANUARY 2020 TO APRIL 2021)

Parcel Count	APN	Street #	Street Name	Sampling Dates	Sample Depths (feet)	ISM
	310-38-002 (A)			9/29-30/2020	0,1,2	x 3 (replicates)
	310-38-002(B)			10/20-21/2020	0,1,2	x 3 (replicates)
	310-38-002 (C)			9/28-29/2020	0,1,2	x 3 (replicates)
	310-38-002 (D)			9/24-25/2020	0,1,2	x 3 (replicates)
	310-38-002 (E)			10/8-9/2020	0,1,2	x 3 (replicates)
	310-38-002 (F)			10/14/2020	0,1,2	x 3 (replicates)
	310-38-002 (G)			10/13/2020	0,1,2	x 3 (replicates)
	310-38-002 (H)			10/20/2020	0,1,2	x 3 (replicates)
	310-38-002 (I)			10/14-15/2020	0,1,2	x 3 (replicates)
3	310-38-002 (J)	--	E Thompson Ave.	10/15-16/2020 12/15/2020	0,1,2	x 3 (replicates)
	310-38-002 (K)			10/7/2020	0,1,2	x 3 (replicates)
	310-38-002 (L)			10/5-6/2020	0,1,2	x 3 (replicates)
	310-38-002 (M)			10/1-2/2020	0,1,2	x 3 (replicates)
	310-38-002 (N)			10/8/2020	0,1,2	x 3 (replicates)
	310-38-002 (O)			10/6-7/2020	0,1,2	x 3 (replicates)
	310-38-002 (P)			9/30/2020 10/1/2020 10/12/2020	0,1,2	x 3 (replicates)
	310-38-002 (Q)			10/21-22/2020	0,1,2	x 3 (replicates)
	310-40-005 A			10/22/2020	0,1,2	x 3 (replicates)
	310-40-005 B			10/22-23/2020	0,1,2	x 3 (replicates)
	310-40-005 C			10/27/2020	0,1,2	x 3 (replicates)
	310-40-005 D			10/27-28/2020	0,1,2	x 3 (replicates)
	310-40-005 E			10/28/2020	0,1,2	x 3 (replicates)
	310-40-005 F			10/29/2020	0,1,2	x 3 (replicates)
	310-40-005 G			10/29-30/2020	0,1,2	x 3 (replicates)
4	310-40-005 H	--	E Thompson Ave.	11/3/2020	0,1,2	x 3 (replicates)
	310-40-005 I			11/3-4/2020	0,1,2	x 3 (replicates)
	310-40-005 J			11/4/2020	0,1,2	x 3 (replicates)
	310-40-005 K			11/5/2020	0,1,2	x 3 (replicates)
	310-40-005 L			11/5-6/2020	0,1,2	x 3 (replicates)
	310-40-005 M			11/18/2020	0,1,2	x 3 (replicates)
	310-40-005 N			11/19/2020	0,1,2	x 3 (replicates)
	310-40-005 O			11/19-20/2020	0,1,2	x 3 (replicates)

TABLE 2-1
SUMMARY OF PARCELS SAMPLED DURING RI ADDENDUM (JANUARY 2020 TO APRIL 2021)

Parcel Count	APN	Street #	Street Name	Sampling Dates	Sample Depths (feet)	ISM
5	324-04-082B	3800	E Shaeffer Ave.	3/30/2021	0,1,2	x 3 (replicates)
6	324-04-126	3970	E Shaeffer Ave.	1/20/2021	0,1,2	x 3 (replicates)
7	324-04-127	3966	E. Shaeffer Ave.	1/21/2021	0,1,2	x 3 (replicates)
8	324-04-131	3946	E. Shaeffer Ave.	1/19/2021	0,1,2	x 3 (replicates)
9	324-04-152_153	3905_09	E L John Ave.	3/9/2021	0,1,2	x 3 (replicates)
10	324-04-194	3974	E. Devlin Ave.	2/11/2021	0,1,2	x 3 (replicates)
11	324-04-549A	3970	E. Hearne Ave.	3/10/2021	0,1,2	x 3 (replicates)
12	324-04-558*	3920	E. Hearne Ave.	2/26/2020	0,1,2	x 3 (replicates)
13	324-04-588	3975	E. Devlin Ave.	2/26/2020	0,1,2	x 3 (replicates)
14	324-04-589	3979	E. Devlin Ave.	1/13/2021	0,1,2	x 3 (replicates)
15	324-04-663A	3945	E. Hearne Ave.	4/8/2021	0,1,2	x 3 (replicates)
16	324-04-668*	3979	E. Hearne Ave.	2/20/2020	0,1,2	x 3 (replicates)
17	324-05-106	3846	E. Lum Ave.	2/4/2021	0,1,2	x 3 (replicates)
18	324-05-107	3842	E. Lum Ave.	2/4/2021	0,1,2	x 3 (replicates)
19	324-05-166A	4026	E. Lum Ave.	2/18/2021	0,1,2	x 3 (replicates)
20	324-05-263A*	4016	E. Thompson Ave.	1/21/2020	0,1,2	x 3 (replicates)
21	324-05-265*	4008	E. Thompson Ave.	1/22/2020	0,1,2	x 3 (replicates)
22	324-05-267*	4000	E. Thompson Ave.	2/19/2020	0,1,2	x 3 (replicates)
23	324-27-024	3860	E. Snavely Ave.	4/7/2021	0,1,2	x 3 (replicates)
24	324-36-017	3966	E. Lass Ave.	2/2/2021 3/31/2021	0,1,2,3,4	x 3 (replicates)
25	324-36-028	3951	E. Lass Ave.	2/16-17/2020	0,1,2	x 3 (replicates)
26	324-36-030	3943	E. Lass Ave.	2/9/2021	0,1,2	x 3 (replicates)
27	324-37-017*	3968	E. Packard Ave.	1/22-23/2020	0,1,2	x 3 (replicates)
28	324-37-019	3976	E. Packard Ave.	1/12/2021	0,1,2	x 3 (replicates)
29	324-39-020*	3914	E. Snavely Ave.	3/5/2020	0,1,2	x 3 (replicates)
30	324-39-038	3927	E. Snavely Ave.	2/10/2021	0,1,2	x 3 (replicates)

TABLE 2-1
SUMMARY OF PARCELS SAMPLED DURING RI ADDENDUM (JANUARY 2020 TO APRIL 2021)

Parcel Count	APN	Street #	Street Name	Sampling Dates	Sample Depths (feet)	ISM
31	Thompson A	--	Thompson Easement	10/15-16/2020	0,1,2	x 3 (replicates)
	Thompson B			12/16/2020	0,1,2	x 3 (replicates)
	Thompson C			12/17-18/2020	0,1,2	x 3 (replicates)
	Thompson D			1/5/2021	0,1,2	x 3 (replicates)
	Thompson E			1/14-15/2021	0,1,2	x 3 (replicates)
	Thompson F			1/21-22/2021	0,1,2	x 3 (replicates)
	Thompson G			2/11-12/2021	0,1,2	x 3 (replicates)
	Thompson H			2/25-26/2021	0,1,2	x 3 (replicates)
	Thompson I			2/18-19/2021	0,1,2	x 3 (replicates)
	Thompson J			1/7-8/2021 3/2/2021 4/1-2/2021	0,1,2,3,4,5,6	x 3 (replicates)
	Thompson K			1/6-7/2021 2/16-17/2021 3/11/2021	0,1,2,3,4,5,6	x 3 (replicates)
	Thompson L			1/6/2021 3/4-5/2021 4/1-2/2021	0,1,2,3,4,5,6	x 3 (replicates)
	Thompson M			12/3-4/2020 2/3/2021 4/1-2/2021	0,1,2,3,4,5,6	x 3 (replicates)
	Thompson N			12/3/2020 3/4/2021	0,1,2,3,4	x 3 (replicates)
	Thompson O			12/2/2020	0,1,2	x 3 (replicates)
	Thompson P			12/1/2020	0,1,2	x 3 (replicates)
	Thompson Q			11/17/2020	0,1,2	x 3 (replicates)

Abbreviations and Notes:
(A) - letter designates that due to size of parcel, parcel was subdivided into sub-parcels
-- Not applicable (open area)
* parcel was resampled due to rejected data
APN - Assessor parcel number
Ave - Avenue
ISM - Incremental sampling method

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
1	31021063A	--	E Thompson Ave	2/12/2020	MRS03-APN31021063A-SS001	0	µg/kg	1.41 J	0.524 J	4.01 U	7.76 J	11.7	16.0	9.15 J	6.29 J	12.3	2.42 J	14.7	2.47 U	8.76 J	2.32 J	5.45 J	14.3
					MRS03-APN31021063A-SS002	0	µg/kg	1.71 J	0.671 J	4.18 U	10.7	14.3	20.7	10.9	7.61 J	15.1	2.61 J	18.8	2.57 U	11.1	2.72 J	6.92 J	18.6
					MRS03-APN31021063A-SS003	0	µg/kg	1.10 J	0.876 J	2.14 J	11.6	16.5	21.3	11.2	8.18 J	16.0	3.48 J	21.2	2.57 U	11.5	2.32 J	10.0	19.8
					MRS03-APN31021063A-SS1001	1	µg/kg	2.09 J	0.984 J	3.35 J	20.8	27.0	47.9	18.5	18.2	52.2	4.77 J	81.3	0.981 J	21.0	3.73 J	24.8	69.1
					MRS03-APN31021063A-SS1002	1	µg/kg	1.49 J	0.669 J	2.89 J	17.8	22.4	29.4	16.4	11.5	21.6	4.13 J	32.0 J	2.63 U	16.8	2.55 J	14.8	29.1
				2/13/2020	MRS03-APN31021063A-SS1003	1	µg/kg	1.88 J	0.487 J	4.23 U	7.15 J	11.3	14.0	7.79 J	5.74 J	9.95	6.51 U	12.2	2.61 U	8.44 J	3.44 J	5.13 J	12.0
				2/12/2020	MRS03-APN31021063A-SS2001	2	µg/kg	2.53 J	1.03 U	4.19 U	4.19 U	4.19 U	6.45 U	6.45 U	4.19 U	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	4.44 J	6.45 U	6.45 U
					MRS03-APN31021063A-SS2002	2	µg/kg	1.91 J	1.04 U	4.24 U	4.24 U	4.24 U	6.53 U	6.53 U	4.24 U	4.24 U	6.53 U	4.24 U	2.61 U	6.53 U	3.21 J	6.53 U	6.53 U
				2/13/2020	MRS03-APN31021063A-SS2003	2	µg/kg	2.30 J	1.06 U	4.32 U	4.32 U	4.32 U	6.65 U	6.65 U	4.32 U	4.32 U	6.65 U	4.32 U	2.66 U	6.65 U	3.89 J	6.65 U	6.65 U
1	31021063B	--	E Thompson Ave	1/23/2020	MRS03-APN31021063B-SS001	0	µg/kg	7.99 U	4.27 U	17.3 U	18.5 J	22.7 J	36.9 J	28.7 J	13.8 J	30.0 J	26.7 U	24.1 J	10.7 U	22.4 J	7.99 U	13.4 J	23.3
					MRS03-APN31021063B-SS002	0	µg/kg	1.58 J	0.793 J	3.24 J	22.8	34.7	47.2	39.2	19.0	35.8	8.88 J	46.8	2.43 U	34.7	3.53 J	20.0	45.1
				1/24/2020	MRS03-APN31021063B-SS003	0	µg/kg	7.99 U	4.26 U	17.3 U	29.5 J	39.5 J	57.6	46.2	24.4 J	45.4	26.6 U	43.1	10.7 U	41.1	7.99 U	21.8 J	41.7
				1/23/2020	MRS03-APN31021063B-SS1001	1	µg/kg	7.88 U	4.21 U	7.13 J	33.9 J	37.8 J	51.3	42.2	24.2 J	47.0	26.3 U	62.6	10.5 U	38.0 J	5.40 U	39.4	54.5
				1/24/2020	MRS03-APN31021063B-SS1002	1	µg/kg	3.00 J	0.436 J	1.67 J	12.1	16.5	24.5	20.0	9.02 J	18.4	4.48 J	23.4	2.58 U	17.8	4.77 J	11.1	22.5
					MRS03-APN31021063B-SS1003	1	µg/kg	1.81 J	0.397 J	1.49 J	10.6	12.3	17.9	10.8	7.73 J	16.4	6.54 U	18.7	2.62 U	10.4	3.63 J	9.77 J	18.7
				1/23/2020	MRS03-APN31021063B-SS2001	2	µg/kg	2.26 J	1.03 U	4.17 U	4.17 U	4.17 U	6.41 U	6.41 U	4.17 U	4.17 U	6.41 U	4.17 U	2.56 U	6.41 U	4.69 J	6.41 U	6.41 U
				1/24/2020	MRS03-APN31021063B-SS2002	2	µg/kg	1.93 J	1.06 U	4.30 U	1.82 J	1.61 J	2.86 J	6.62 U	4.30 U	2.57 J	6.62 U	4.30 U	2.65 U	6.62 U	3.71 J	6.62 U	6.62 U
					MRS03-APN31021063B-SS2003	2	µg/kg	1.40 J	1.06 U	4.30 U	4.30 U	4.30 U	6.61 U	6.61 U	4.30 U	4.30 U	6.61 U	4.30 U	2.64 U	6.61 U	3.20 J	6.61 U	6.61
1	31021063C	--	E Thompson Ave	1/28/2020	MRS03-APN31021063C-SS001	0	µg/kg	0.982 J	0.847 J	1.50 J	12.1 J	18.8 J	24.7 J	13.1 J	8.19 J	17.9 J	3.24 J	18.1 J	2.64 U	15.4 J	1.89 J	6.80 J	17.0 J
					MRS03-APN31021063C-SS002	0	µg/kg	1.98 UJ	0.750 J	1.81 J	14.3 J	22.3 J	27.0 J	15.3 J	11.0 J	20.2 J	5.20 J	22.7 J	2.65 U	18.4 J	1.98 UJ	9.55 J	21.9 J
					MRS03-APN31021063C-SS003	0	µg/kg	0.701 J	0.697 J	2.30 J	17.1 J	22.1 J	31.4 J	14.6 J	12.8 J	24.6 J	4.14 J	29.3 J	2.51 UJ	17.7 J	1.89 UJ	8.84 J	25.4 J
					MRS03-APN31021063C-SS1001	1	µg/kg	1.93 UJ	0.679 J	4.18 UJ	8.28 J	10.6 J	13.7 J	6.83 J	4.70 J	10.9 J	6.44 UJ	11.7 J	2.57 UJ	8.21 J	1.48 J	4.59 J	11.7 J
					MRS03-APN31021063C-SS1002	1	µg/kg	1.00 J	1.06 UJ	4.31 UJ	7.17 J	9.39 J	12.0 J	6.70 J	4.88 J	9.49 J	6.64 UJ	11.6 J	2.65 UJ	7.92 J	2.29 J	4.88 J	10.6 J
					MRS03-APN31021063C-SS1003	1	µg/kg	1.95 U	1.04 U	4.23 U	5.46 J	8.20 J	10.0	5.93 J	4.13 J	7.88 J	6.51 U	7.12 J	2.61 U	6.71 J	1.83 J	2.76 J	7.15 J
					MRS03-APN31021063C-SS2001	2	µg/kg	1.97 UJ	1.05 UJ	4.27 UJ	4.27 UJ	4.27 UJ	6.57 UJ	6.57 UJ	4.27 UJ	4.27 U	6.57 UJ	4.27 UJ	2.63 UJ	6.57 UJ	1.97 UJ	6.57 UJ	6.57 UJ
					MRS03-APN31021063C-SS2002	2	µg/kg	1.94 U	1.03 U	4.20 U	1.95 J	1.94 J	2.54 J	6.46 U	4.20 U	2.19 J	6.46 UJ	2.36 J	2.59 U	6.46 U	2.15 J	6.46 U	6.46 U
					MRS03-APN31021063C-SS2003	2	µg/kg	0.679 J	0.954 UJ	3.88 UJ	3.88 UJ	3.88 UJ	2.39 J	5.96 UJ	3.88 UJ	3.88 UJ	5.96 UJ	3.88 UJ	2.39 U	2.14 J	2.31 J	5.96 UJ	5.96 UJ
1	31021063D	--	E Thompson Ave	1/28/2020	MRS03-APN31021063D-SS001	0	µg/kg	7.28 UJ	3.88 UJ	15.8 U	28.6 J	37.3	56.0	31.4 J	20.5 J	45.7	24.3 U	56.6	9.71 UJ	30.1 J	7.28 UJ	21.5 J	54.4
					MRS03-APN31021063D-SS002	0	µg/kg	1.22 J	9.86 UJ	4.13 J	39.4	58.5 J	74.1 J	40.8 J	28.0 J	47.4 J	10.3 J	60.7 J	2.63 UJ	47.5 J	2.53 J	21.6 J	61.6 J
					MRS03-APN31021063D-SS003	0	µg/kg	1.18 J	9.78 UJ	4.79 J	41.8 J	63.2 J	77.1 J	42.7 J	30.0 J	50.2 J	10.9 J	67.0 J	2.61 UJ	45.7 J	2.52 J	24.9 J	68.3 J
					MRS03-APN31021063D-SS1001	1	µg/kg	0.964 J	1.05 UJ	1.85 J	15.0 J	22.6 J	25.2 J	14.2 J	9.91 J	17.6 J	3.58 J	22.5 J	2.62 UJ	14.9 J	2.47 J	9.83 UJ	22.8 J
				1/29/2020	MRS03-APN31021063D-SS1002	1	µg/kg	0.930 J	9.48 UJ	4.17 J	24.2 J	30.3 J	34.9 J	17.9 J	14.5 J	28.0	4.54 J	53.8 J	0.904 J	20.7 J	2.25 J	32.6 J	53.8 J
				1/29/2020	MRS03-APN31021063D-SS1003	1	µg/kg	0.823 J	1.04 UJ	1.47 J	9.51 J	15.3 J	16.2 J	9.95 J	7.87 J	11.5 J	3.22 J	14.8 J	2.60 UJ	10.5 J	1.97 J	9.75 UJ	14.6 J
				1/28/2020	MRS03-APN31021063D-SS2001	2	µg/kg	0.798 J	1.03 UJ	4.16 UJ	4.16 UJ	4.17 J	6.41 UJ	6.41 UJ	4.16 UJ	4.16 UJ	6.41 UJ	4.16 UJ	2.56 UJ	6.41 UJ	1.99 J	6.41 UJ	6.41 UJ
				1/29/2020	MRS03-APN31021063D-SS2002	2	µg/kg	0.804 J	0.988 UJ	4.01 UJ	4.01 UJ	4.38 J	6.17 UJ	6.17 UJ	4.01 UJ	4.01 UJ	6.17 UJ	4.01 UJ	2.47 UJ	6.17 UJ	1.94 J	6.17 UJ	6.17 UJ
					MRS03-APN31021063D-SS2003	2	µg/kg	0.938 J	0.972 UJ	3.95 UJ	3.95 UJ	3.95 UJ	6.07 UJ	6.07 UJ	3.95 UJ	3.95 UJ	6.07 UJ	3.95 UJ	2.43 UJ	6.07 UJ	2.10 J	6.07 UJ	6.07 UJ

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
1	31021063E	--	E Thompson Ave	1/29/2020	MRS03-APN31021063E-SS001	0	µg/kg	1.77 U	0.719 J	1.91 J	20.6	31.7	39.1	22.8	15.0	29.6	5.65 J	36.8	2.36 U	23.0	1.13 J	12.7	36.6
					MRS03-APN31021063E-SS002	0	µg/kg	1.01 J	1.46 J	2.95 J	29.1	42.6	53.0	28.1	21.3	41.3	6.76 J	47.4	2.61 U	32.9	2.67 J	16.3	50.1
					MRS03-APN31021063E-SS003	0	µg/kg	0.624 J	0.676 J	1.80 J	18.1	25.6	35.3	19.3	13.7	25.5	4.79 J	31.2	2.54 U	21.5	1.27 J	10.9	31.6
					MRS03-APN31021063E-SS1001	1	µg/kg	1.99 U	1.06 UJ	4.31 UJ	4.41 J	6.03 J	8.25 J	4.28 J	3.01 J	6.0 J	6.64 UJ	7.70 J	2.65 UJ	4.58 J	0.934 J	3.08 J	7.46 J
					MRS03-APN31021063E-SS1002	1	µg/kg	1.51 J	1.05 UJ	4.28 UJ	7.24 J	13.4 J	12.7 J	7.61 J	4.64 J	8.68 J	2.65 J	11.3 J	2.63 UJ	8.00 J	3.06 J	6.58 UJ	11.3 J
					MRS03-APN31021063E-SS1003	1	µg/kg	1.17 J	1.04 UJ	4.22 UJ	7.37 J	13.8 J	13.5 J	7.86 J	5.08 J	9.21 J	6.49 UJ	10.9 J	2.60 UJ	8.21 J	2.23 J	6.49 UJ	11.3 J
					MRS03-APN31021063E-SS2001	2	µg/kg	0.982 J	1.02 UJ	4.13 UJ	4.13 UJ	4.23 J	6.35 UJ	6.35 UJ	4.13 UJ	4.13 UJ	6.35 UJ	4.13 UJ	2.54 UJ	6.35 UJ	2.31 J	6.35 UJ	6.35 UJ
					MRS03-APN31021063E-SS2002	2	µg/kg	1.07 J	0.978 UJ	3.97 UJ	3.97 UJ	4.12 J	6.11 UJ	6.11 UJ	3.97 UJ	3.97 UJ	6.11 UJ	3.97 Uj	2.44 UJ	6.11 UJ	2.73 J	6.11 UJ	6.11 UJ
					MRS03-APN31021063E-SS2003	2	µg/kg	1.06 J	1.04 UJ	4.22 UJ	4.22 UJ	4.22 UJ	6.49 UJ	6.49 UJ	4.22 UJ	4.22 UJ	6.49 UJ	4.22 UJ	2.60 UJ	6.49 UJ	2.34 J	6.49 UJ	6.49 UJ
1	31021063F	--	E Thompson Ave	1/30/2020	MRS03-APN31021063F-SS001	0	µg/kg	0.869 J	0.622 J	1.38 J	15.0 J	20.3 J	27.4 J	13.4 J	9.77 J	22.4 J	3.30 J	23.9 J	2.53 UJ	15.7 J	1.94 J	8.60 J	23.4 J
					MRS03-APN31021063F-SS002	0	µg/kg	1.75 J	1.36 J	3.74 J	40.1	50.4	68.9	32	23.7	56.2	8.41 J	65.8	2.61 U	40.0	4.46 J	22.3	62.8
					MRS03-APN31021063F-SS003	0	µg/kg	1.59 J	1.58 J	4.09 J	39.2	52.2	66.9	33.4	25.0	54.2	9.04 J	68.5	2.50 U	42.2	3.39 J	28.1	66.6
					MRS03-APN31021063F-SS1001	1	µg/kg	2.49 J	0.547 J	4.10 U	9.25 J	12	16.4	8.27	5.67 J	13.4	6.31 U	14.5	2.52 U	10.0	4.43 J	5.89 J	14.4
					MRS03-APN31021063F-SS1002	1	µg/kg	1.39 J	1.06 U	4.32 U	5.84 J	7.60 J	10.9	5.61 J	3.93 J	8.43 J	6.65 U	9.08 J	2.66 U	6.25 J	2.89 J	3.34 J	8.77 J
					MRS03-APN31021063F-SS1003	1	µg/kg	3.29 J	0.367 J	4.11 U	6.14 J	7.92 J	10.1	5.27 J	4.13 J	8.87 J	6.32 U	9.21 J	2.53 U	6.25 J	5.58 J	3.59 J	9.02 J
					MRS03-APN31021063F-SS2001	2	µg/kg	1.46 J	1.06 U	4.31 UJ	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	3.66 J	6.63 U	6.63 U
					MRS03-APN31021063F-SS2002	2	µg/kg	1.32 J	1.03 U	4.17 U	4.17 U	4.17 U	6.41 U	6.41 U	4.17 U	4.17 U	6.41 U	4.17 U	2.57 U	6.41 U	3.68 J	6.41 U	6.41 U
					MRS03-APN31021063F-SS2003	2	µg/kg	1.56 J	1.00 U	4.07 U	4.07 U	4.07 U	6.26 U	6.26 U	4.07 U	4.07 U	6.26 U	4.07 U	2.50 U	6.26 U	4.51 J	6.26 U	6.26 U
1	31021063G	--	E Thompson Ave	1/30/2020	MRS03-APN31021063G-SS001	0	µg/kg	1.56 J	1.14 J	2.66 J	29.3	44.4	57.5	28.8	21.7	45.1	7.07 J	50.7	2.57 U	33.2	3.42 J	16.8	48.4
					MRS03-APN31021063G-SS002	0	µg/kg	1.93 J	1.42 J	3.24 J	34.8	50.1	61.7	30.8	26.7	50.8	8.0 J	57.6	2.63 U	37.0	4.05 J	20.0	57.7
					MRS03-APN31021063G-SS003	0	µg/kg	1.55 J	1.20 J	2.46 J	27.6 J	42.7 J	54.9 J	27.1 J	19.5 J	40.2 J	7.00 J	45.5 J	2.64 U	32.4 J	3.21 J	15.4 J	44.5 J
					MRS03-APN31021063G-SS1001	1	µg/kg	2.38 J	0.435 J	4.21 U	4.23 J	5.80 J	7.43 J	3.60 J	3.06 J	5.84 J	6.49 U	7.24 J	2.59 U	4.59 J	5.22 J	2.82 J	7.04 J
					MRS03-APN31021063G-SS1002	1	µg/kg	2.09 J	1.03 U	4.19 U	5.39 J	7.57 J	9.74	4.68 J	3.52 J	7.24 J	6.44 U	9.72	2.58 U	5.58 J	4.52 J	3.61 J	9.47 J
				1/31/2020	MRS03-APN31021063G-SS1003	1	µg/kg	2.12 J	0.358 J	3.99 U	6.59 J	8.75 J	11.3	5.61 J	4.18 J	9.61	6.15 U	10.8	2.46 U	7.0 J	2.69 J	4.50 J	10.6
				1/30/2020	MRS03-APN31021063G-SS2001	2	µg/kg	1.30 J	1.04 U	4.20 U	4.20 U	4.20 U	6.47 U	6.47 U	4.20 U	4.20 U	6.47 U	4.20 U	2.59 U	6.47 U	3.10 J	6.47 U	6.47 U
					MRS03-APN31021063G-SS2002	2	µg/kg	1.57 J	1.03 U	4.19 U	4.19 U	1.43 J	6.44 U	6.44 U	4.19 U	4.19 U	6.44 U	4.19 U	2.58 U	6.44 U	4.10 J	6.44 U	6.44 U
				1/31/2020	MRS03-APN31021063G-SS2003	2	µg/kg	1.64 J	1.01 U	4.10 U	4.10 U	4.10 U	6.31 U	6.31 U	4.10 U	4.10 U	6.31 U	4.10 U	2.52 U	6.31 U	3.63 J	6.31 U	6.31 U
1	31021063H	--	E Thompson Ave	2/11/2020	MRS03-APN31021063H-SS001	0	µg/kg	1.90 J	2.13 J	8.19 J	57.9	72.0	103	57.8	32.1	61.6	14.0	82.0	2.63 U	66.6	3.60 J	27.8	81.9
					MRS03-APN31021063H-SS002	0	µg/kg	2.25 J	1.52 J	7.50 J	56.4	73.1	107	62.2	35.1	60.5	15.3	76.2	2.47 U	72.0	3.84 J	24.7	76.4
					MRS03-APN31021063H-SS003	0	µg/kg	2.79 J	1.36 J	7.95 J	55.2	69.3 J	102 J	57.8 J	31.3	56.4	14.4 J	76.7	2.54 U	67.5 J	4.37 J	28.5	72.2
					MRS03-APN31021063H-SS1001	1	µg/kg	1.41 J	0.553 J	5.02 J	16.3	20.1	27.4	13.5	9.74	16.8	4.45 J	23.9	2.55 U	16.4	2.25 J	8.01 J	23.7
					MRS03-APN31021063H-SS1002	1	µg/kg	4.04 J	0.826 J	5.27 J	20.8	26.4	35.4	19.7	12.4	22.3	5.91 J	27.2	2.50 U	22.3	5.43 J	10.2	28.1
					MRS03-APN31021063H-SS1003	1	µg/kg	2.31 J	0.665 J	4.23 U	9.83	13.8	19.3	10.6	7.61 J	14.2	2.70 J	16.5	2.60 U	11.8	3.35 J	6.62 J	16.5
					MRS03-APN31021063H-SS2001	2	µg/kg	1.94 J	1.01 U	4.10 U	4.10 U	3.54 J	6.31 U	6.31 U	1.93 J	4.10 U	6.31 U	4.10 U	2.52 U	6.31 U	2.51 J	6.31 U	6.31 U
					MRS03-APN31021063H-SS2002	2	µg/kg	1.95 J	1.01 U	4.12 U	4.12 U	4.12 U	6.34 U	6.34 U	2.01 J	4.12 U	6.34 U	4.12 U	2.54 U	6.34 U	2.87 J	6.34 U	6.34 U
					MRS03-APN31021063H-SS2003	2	µg/kg	2.73 J	1.01 U	4.12 U	4.12 U	4.12 U	6.33 U	6.33 U	4.12 U	4.12 U	6.33 U	4.12 U	2.53 U	6.33 U	3.82 J	6.33 U	6.33 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
1	31021063I	--	E Thompson Ave	2/12/2020	MRS03-APN31021063I-SS001	0	µg/kg	1.82 J	1.21 J	6.46 J	43.6	52.8	74.7	39.6	25.0	48.4	10.4	63.2	2.43 U	47.2	3.03 J	20.3	64.3
					MRS03-APN31021063I-SS002	0	µg/kg	1.99 J	1.13 J	6.35 J	39.1	54.0	75.4	43.9	27.3	43.0	12.2	58.9	2.62 U	53.3	3.08 J	21.0	57.6
					MRS03-APN31021063I-SS003	0	µg/kg	1.66 J	0.964 J	2.30 J	25.2	39.5	49.4	25.7	19.6	35.4	6.88 J	43.5	2.66 U	30.6	2.50 J	14.8	44.2
				2/13/2020	MRS03-APN31021063I-SS1001	1	µg/kg	2.41 J	0.517 J	4.17 U	8.24 J	12.5	15.7	8.36 J	6.02 J	11.8	6.41 U	14.6	2.56 U	8.89 J	3.56 J	6.04 J	14.7
					MRS03-APN31021063I-SS1002	1	µg/kg	2.68 J	1.45 J	1.59 J	14.4	21.8	25.6	14.0	10.2	21.0	3.78 J	21.8	0.904 J	15.0	5.02 J	9.02 J	25.1
					MRS03-APN31021063I-SS1003	1	µg/kg	1.84 J	0.980 U	3.98 U	7.02 J	10.2	119	5.86 J	5.04 J	7.68 J	2.60 J	10.9	2.45 U	7.84 J	2.65 J	3.82 J	10.8
					MRS03-APN31021063I-SS2001	2	µg/kg	2.64 J	1.03 U	4.19 U	4.19 U	3.36 J	6.45 U	6.45 U	1.94 J	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	3.82 J	6.45 U	6.45 U
					MRS03-APN31021063I-SS2002	2	µg/kg	1.89 J	1.04 U	4.21 U	4.21 U	4.21 U	6.47 U	6.47 U	4.21 U	4.21 U	6.47 U	4.21 U	2.59 U	6.47 U	2.72 J	6.47 U	6.47 U
					MRS03-APN31021063I-SS2003	2	µg/kg	3.39 J	0.953 U	3.87 U	3.39 J	3.30 J	5.48 J	5.52 J	4.71 J	4.13 J	4.90 J	3.87 U	0.852 J	5.45 J	4.85 J	5.96 U	5.96 U
1	31021063J	--	E Thompson Ave	2/13/2020	MRS03-APN31021063J-SS001	0	µg/kg	1.20 J	1.52 J	4.52 J	49.1	70.2	91.2	48.1	35.7	65.8	12.5	85.9	2.40 U	54.9	2.92 J	29.3	86.1
					MRS03-APN31021063J-SS002	0	µg/kg	1.02 J	1.37 J	3.97 J	44.3	66.1	83.6	43.8	32.8	59.2	11.7	75.1	2.37 U	51.3	2.53 J	26.0	76.1
					MRS03-APN31021063J-SS003	0	µg/kg	1.16 J	1.43 J	4.43 J	44.4	64.9 J	81.9	41.9 J	32.3	59.3	11.1 J	80.2	2.40 U	45.4 J	2.83 J	28.6	79.8
					MRS03-APN31021063J-SS1001	1	µg/kg	0.821 J	0.331 J	4.25 U	9.74 J	14.2	18.4	9.34 J	6.53 J	13.5	2.66 J	16.7	2.61 U	10.4	2.19 J	6.05 J	17.0
					MRS03-APN31021063J-SS1002	1	µg/kg	0.922 J	0.585 J	1.64 J	14.9	19.8	25.9	13.0	10.3	19.3	3.50 J	27.4	2.40 U	14.2	2.56 J	10.6	26.5
					MRS03-APN31021063J-SS1003	1	µg/kg	0.728 J	0.414 J	4.04 U	10.2	14.8	18.7	9.66	6.90 J	13.9	2.45 J	18.7	2.49 U	10.4	2.13 J	6.73 J	18.4
					MRS03-APN31021063J-SS2001	2	µg/kg	0.711 J	1.01 U	4.08 U	4.08 U	4.08 U	6.28	6.28 U	4.08 U	4.08 U	6.28 U	4.08 U	2.51 U	6.28 U	2.05 J	6.28 U	6.28 U
					MRS03-APN31021063J-SS2002	2	µg/kg	0.717 J	1.05 UJ	4.25 U	1.91 J	2.79 U	3.19 J	6.54 U	4.25 U	2.72 J	6.54 U	3.39 J	2.61 U	6.54 U	2.04 J	6.54 U	3.44 J
					MRS03-APN31021063J-SS2003	2	µg/kg	0.756 J	1.04 U	4.21 U	4.21 U	4.21 U	6.48 U	6.48 U	4.21 U	4.21 U	6.48 U	4.21 U	2.59 U	6.48 U	2.06 J	6.48 U	6.48 U
1	31021063K	--	E Thompson Ave	2/14/2020	MRS03-APN31021063K-SS001	0	µg/kg	1.40 J	1.07 J	2.93 J	33.1	50.1	60.6	32.0	24.1	4.21 U	8.69 J	56.2	2.61 U	37.6	3.37 J	19.3	56.5
					MRS03-APN31021063K-SS002	0	µg/kg	1.41 J	1.00 J	2.69 J	30.7	45.2	60.2	31.4	22.1	41.0	8.19 J	51.5	2.63 U	36.3	3.24 J	17.7	52.7
					MRS03-APN31021063K-SS003	0	µg/kg	1.23 J	1.08 J	2.82 J	31.7	45.9	60.5	30.6	23.2	42.6	7.63 J	54.7	2.65 U	33.6	3.17 J	18.7	54.6
				2/13/2020	MRS03-APN31021063K-SS1001	1	µg/kg	0.807 J	1.01 U	4.11 U	4.64 J	7.08 J	9.21 J	4.70 J	3.41 J	6.69 J	6.33 U	7.76 J	2.53 U	5.08 J	2.33 J	2.78 J	8.05 J
					MRS03-APN31021063K-SS1002	1	µg/kg	0.865 J	0.410 J	3.95 UJ	9.92	14.0	22.3	10.3	7.47 J	15.3	2.39 J	14.2	2.43 U	11.5	2.34 J	4.39 J	15.3
					MRS03-APN31021063K-SS1003	1	µg/kg	0.944 J	0.423 J	4.06 U	14.3	17.2	24.2	16.2	14.7	18.0	10.5	15.2	2.50 U	17.4	2.09 J	5.77 J	15.1
					MRS03-APN31021063K-SS2001	2	µg/kg	1.19 J	0.999 U	4.06 U	4.06 U	4.06 U	6.24 U	6.24 U	4.06 U	4.06 U	6.24 U	4.06 U	2.50 U	6.24 U	3.56 J	6.24 U	6.24 U
					MRS03-APN31021063K-SS2002	2	µg/kg	0.761 J	1.04 U	4.23 U	4.23 U	4.23 U	6.50 U	6.50 U	4.23 U	4.23 U	6.50 U	4.23 U	2.60 U	6.50 U	2.24 J	6.50 U	6.50 U
					MRS03-APN31021063K-SS2003	2	µg/kg	0.848 J	1.01 U	4.12 U	4.12 U	4.12 U	6.34 U	6.34 U	4.12 U	4.12 U	6.34 U	4.12 U	2.54 U	6.34 U	2.16 J	6.34 U	6.34 U
2	31021078A	--	E Thompson Ave	2/18/2020	MRS03-APN31021078A-SS001	0	µg/kg	0.716 J	0.895 J	3.36 J	30.6	47.6	62.2	37.1	23.1	42.7	9.73	53.1	2.45 U	38.0	1.64 J	19.1	52.6
					MRS03-APN31021078A-SS002	0	µg/kg	0.649 J	1.05 J	3.17 J	32.9 J	51.0 J	64.9 J	38.8 J	23.9 J	44.1 J	10.2 J	56.0 J	2.55 UJ	43.7 J	1.43 J	19.7 J	56.8 J
					MRS03-APN31021078A-SS003	0	µg/kg	1.71 J	4.55 J	12.7	55.7	76.2	95.8	57.1	39.9	67.6	14.8	112	2.89 J	65.9	3.07 J	61.7	102
					MRS03-APN31021078A-SS1001	1	µg/kg	1.97 U	1.05 U	4.26 U	8.20 J	12.3	17.0	10.1	6.18 J	11.5	6.56 U	14.7	2.62 U	11.5	1.35 J	5.59 J	15.0
					MRS03-APN31021078A-SS1002	1	µg/kg	1.79 U	0.482 J	1.30 J	11.8	16.5	22.9	13.9	8.53 J	15.7	3.80 J	20.2	2.39 U	15.4	1.38	7.82	20.1
					MRS03-APN31021078A-SS1003	1	µg/kg	1.96 U	0.385 J	4.24 U	7.87 J	11.1	14.7	8.89 J	5.19 J	10.6	6.52 U	14.2	2.61 U	10.4	1.30 J	5.77 J	13.7
					MRS03-APN31021078A-SS2001	2	µg/kg	1.87 UJ	0.997 UJ	4.05 UJ	4.05 UJ	2.26 J	3.11 J	6.23 UJ	4.05 UJ	1.93 J	6.23 UJ	2.73 J	2.49 UJ	6.23 UJ	1.48 J	6.23 UJ	2.52 J
					MRS03-APN31021078A-SS2002	2	µg/kg	1.81 U	0.966 U	3.92 U	3.92 U	3.92 U	6.04 U	6.04 U	3.92 U	3.92 U	6.04 U	3.92 U	2.41 U	6.04 U	1.28 J	6.04 U	6.04 U
					MRS03-APN31021078A-SS2003	2	µg/kg	1.57 J	0.953 U	3.87 U	3.87 U	3.87 U	5.95 U	5.95 U	3.87 U	3.87 U	5.95 U	1.99 J	2.38 U	5.95 U	1.49 J	5.95 U	5.95 U
2	31021078B	--	E Thompson Ave	9/15/2020	MRS03-APN31021078B-SS001R	0	µg/kg	0.725 J	0.972 J	2.99 J	30.3 J	38.8 J	53.9 J	25.9 J	20.2 J	38.5 J	7.09 J	54.4 J	2.50 UJ	33.8 J	1.37 J	19.6 J	52.8 J
					MRS03-APN31021078B-SS002R	0	µg/kg	0.800 J	0.970 J	2.81 J	28.9	38	51	24.7	18.5	36.1	6.58 J	52.5	2.36 U	28.2	1.38 J	18.8	49.4
				9/22/2020	MRS03-APN31021078B-SS003R	0	µg/kg	1.05 J	1.25 J	4.01 J	40.4	46.8	71.6	32.9	23.5	51.6	8.29 J	72.3	2.56 U	37.1	2.28 J	30.7	69.4
					MRS03-APN31021078B-SS1001R	1	µg/kg	1.99 U	1.06 U	4.31 U	8.20 J	9.87 J	14.8	6.50 J	4.95 J	10.1	6.63 U	15.6	2.65 U	7.53 J	1.00 J	6.62 J	14.3
				9/15/2020	MRS03-APN31021078B-SS1002R	1	µg/kg	1.82 U	0.318 J	3.95 U	7.79 J	10.4	14.2	6.93 J	5.25 J	9.95	2.54 J	13.4	2.43 U	8.73 J	1.82 U	4.78 J	13
				9/22/2020	MRS03-APN31021078B-SS1003R	1	µg/kg	0.800 J	0.573 J	4.30 U	14.4	16.9	24.4	13	11.8	18.6	5.30 J	19.1	2.65 U	15.4	1.99 J	8.20 J	19.4
				9/15/2020	MRS03-APN31021078B-SS2001R	2	µg/kg	1.85 U	0.986 U	4.00 U	4.00 U	1.37 J	6.16 U	6.16 U	4.00 U	4.00 U	6.16 U	2.69 J	2.46 U	6.16 U	1.85 U	2.85 J	2.11 J
				9/15/2020	MRS03-APN31021078B-SS2002R	2	µg/kg	1.84 U	0.984 U	3.99 U	2.86 J	2.25 J	5.27 J	6.15 U	3.99 U	3.84 J	6.15 U	5.81 J	2.46 U	2.79 J	0.605 J	6.15 U	3.53 J
				9/30/2020	MRS03-APN31021078B-SS2003R	2	µg/kg	1.88 U	1.00 U	4.08 U	4.08 U	1.76 J	2.64 J	6.28 U	4.08 U	1.90 J	6.28 U	4.08 U	2.51 U	6.28 U	9.42 U	6.28 U	2.26 J
2	31021078C	--	E Thompson Ave	2/25/2020	MRS03-APN31021078C-SS001	0	µg/kg	0.900 J	0.692 J	2.03 J	23.4	32.2	42.8	25.5	20.4	31.9	12.4	32.2	2.66 U	26.6	1.97 J	11.7	34.0
					MRS03-APN31021078C-SS002	0	µg/kg	1.25 J	0.544 J	1.82 J	17.3	25.1	34.9	18.2	13.8	25.0	5.02 J	31.7	2.64 U	19.0	3.27 J	12.0	32.3
					MRS03-APN31021078C-SS003	0	µg/kg	0.923 J	0.723 J	1.76 J	17.6	25.1	35.7	19.3	13.8	25.5	4.25 J	30.8	2.65 U	21.2	2.46 J	11.2	32.9
					MRS03-APN31021078C-SS1001	1	µg/kg	0.683 J	0.397 J	2.05 J	13.0	15.0	21.6	11.4	8.53 J	15.7	2.88 J	24.9	2.57 U	12.3	1.40 J	11.3	23.6
					MRS03-APN31021078C-SS1002	1	µg/kg	1.98 U	0.322 J	4.30 U	6.98 J	9.94	13.6	7.19 J	5.46 J	10.1	6.61 U	11.8	2.64 U	7.70 J	1.11 J	4.49 J	12.6
					MRS03-APN31021078C-SS1003	1	µg/kg	1.96 U	1.05 U	4.25 U	3.94 J	5.26 J	8.11 J	3.95 J	3.11 J	5.58 J	6.54 U	7.23 J	2.61 U	4.53 J	1.16 J	2.61 J	7.22 J
					MRS03-APN31021078C-SS2001	2	µg/kg	5.19 J	0.541 J	5.96 U	5.96 U	5.96 U	9.17 U	9.17 U	5.96 U	5.96 U	9.17 U	5.96 U	3.67 U	9.17 U	1.54 J	9.17 U	9.17 U
					MRS03-APN31021078C-SS2002	2	µg/kg	2.94 U	1.57 U	6.37 U	6.37 U	6.37 U	9.80 U	9.80 U	6.37 U	6.37 U	9.80 U	6.37 U	3.92 U	9.80 U	1.11 J	9.80 U	9.80 U
					MRS03-APN31021078C-SS2003	2	µg/kg	2.86 U	1.53 U	6.20 U	3.72 J	5.12 J	6.96 J	3.93 J	6.20 U	3.99 J	9.53 U	4.67 J	3.81 U	4.36 J	1.67 J	9.53 U	4.87 J

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
2	31021078D	--	E Thompson Ave	2/28/2020	MRS03-APN31021078D-SS001	0	µg/kg	0.795 J	1.16 J	3.09 J	32.1	41.7	58	30	21.9	40.5	8.15 J	52.9	2.55 U	35.2	1.67 J	19.7	55.6
					MRS03-APN31021078D-SS002	0	µg/kg	0.742 J	0.988 J	2.75 J	30.1	40.9	58.3	30.5	19.2	42	7.99 J	51.7	2.66 U	33.1	1.50 J	19.4	54.7
					MRS03-APN31021078D-SS003	0	µg/kg	1.81 J	0.938 J	2.56 J	27.8	37.5	54	28.6	19.9	39	7.75 J	49.2	2.52 U	30.1	1.67 J	17.8	52.2
				2/26/2020	MRS03-APN31021078D-SS1001	1	µg/kg	0.735 J	1.01 U	4.12 U	5.61 J	7.57 J	11.3	5.96 J	4.02 J	8.13 J	6.33 U	10.2	2.53 U	7.04 J	1.06 J	3.85 J	10.6
				2/27/2020	MRS03-APN31021078D-SS1002	1	µg/kg	0.800 J	1.02 U	4.14 U	5.00 J	6.84 J	10.1	5.41 J	3.61 J	6.64 J	6.37 U	8.59 J	2.55 U	5.81 J	1.17 J	3.45 J	8.72 J
					MRS03-APN31021078D-SS1003	1	µg/kg	0.710 J	1.06 U	4.32 U	7.94 J	9.19 J	14.5	8.66 J	7.02 J	10.3	5.07 J	10.8	2.66 U	9.42 J	1.99 U	4.36 J	11.2
				2/26/2020	MRS03-APN31021078D-SS2001	2	µg/kg	0.916 J	0.991 U	4.02 U	3.05 J	1.55 J	3.69 J	6.19 U	3.16 J	3.56 J	6.19 U	4.02 U	2.48 U	2.27 J	1.27 J	6.19 U	6.19 U
				2/27/2020	MRS03-APN31021078D-SS2002	2	µg/kg	0.869 J	1.01 U	4.08 U	4.08 U	4.08 U	6.28 U	6.28 U	4.08 U	4.08 U	6.28 U	4.08 U	2.51 U	6.28 U	1.18 J	6.28 U	6.28 U
					MRS03-APN31021078D-SS2003	2	µg/kg	0.861 J	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	2.64 J	2.62 U	6.54 U	1.08 J	6.54 U	6.54 U
2	31021078E	--	E Thompson Ave	9/22/2020	MRS03-APN31021078E-SS001R	0	µg/kg	1.18 J	0.952 J	2.99 J	30.4	40.4	58.6	27.1	19.9	41.8	6.88 J	56.3	2.62 U	30.7	2.81 J	23.3	54.3
					MRS03-APN31021078E-SS002R	0	µg/kg	1.13 J	0.819 J	2.24 J	25.2	32.1	44.3	21.7	18.9	33.9	5.52 J	44.9	2.63 U	24.8	2.34 J	18.5	43.8
					MRS03-APN31021078E-SS003R	0	µg/kg	1.07 J	0.815 J	2.10 J	23.8 J	29.8 J	44.6 J	20.4 J	15.3 J	33.0 J	5.32 J	41.7 J	2.40 UJ	23.7 J	2.45 J	17.0 J	40.9 J
				9/16/2020	MRS03-APN31021078E-SS1001R	1	µg/kg	1.94 U	1.03 U	4.20 U	5.13 J	6.67 J	9.03 J	4.42 J	3.46 J	6.59 J	6.46 U	9.49 J	2.58 U	6.38 J	1.94 U	3.73 J	9.11 J
					MRS03-APN31021078E-SS1002R	1	µg/kg	1.86 U	0.990 U	4.02 U	3.97 J	5.27 J	7.39 J	3.60 J	2.76 J	5.05 J	6.18 U	7.11 J	2.47 U	5.18 J	1.86 U	2.75 J	6.48 J
					MRS03-APN31021078E-SS1003R	1	µg/kg	1.92 U	1.02 U	4.16 U	4.10 J	6.02 J	8.11 J	3.89 J	3.07 J	5.72 J	6.39 U	7.62 J	2.56 U	5.74 J	1.92 U	3.06 J	7.10 J
					MRS03-APN31021078E-SS2001R	2	µg/kg	1.92 UJ	1.02 UJ	4.16 UJ	4.16 UJ	4.16 UJ	6.39 UJ	6.39 UJ	4.16 UJ	4.16 UJ	6.39 UJ	4.16 UJ	2.56 UJ	6.39 UJ	1.92 UJ	6.39 UJ	6.39 UJ
					MRS03-APN31021078E-SS2002R	2	µg/kg	1.93 U	1.03 U	4.19 U	4.19 U	4.19 U	6.44 U	6.44 U	4.19 U	4.19 U	6.44 U	4.19 U	2.58 U	6.44 U	1.93 U	6.44 U	6.44 U
					MRS03-APN31021078E-SS2003R	2	µg/kg	1.96 U	1.04 U	4.24 U	4.24 U	4.24 U	6.52 U	6.52 U	4.24 U	4.24 U	6.52 U	4.24 U	2.61 U	6.52 U	1.96 U	6.52 U	6.52 U
2	31021078F	--	E Thompson Ave	3/3/2020	MRS03-APN31021078F-SS001	0	µg/kg	0.786 J	0.534 J	1.54 J	13.8	21.0	29.9	16.5	11.2	21.7	3.93 J	25.5	2.65 U	18.2	1.62 J	9.04 J	27.3
					MRS03-APN31021078F-SS002	0	µg/kg	0.780 J	0.599 J	1.83 J	17.6	23.7	36.2	20.5	14.0	25.5	4.96 J	31.4	2.59 U	20.9	1.64 J	11.8	32.5
					MRS03-APN31021078F-SS003	0	µg/kg	0.821 J	0.478 J	4.32 U	13.9	19.4	28.8	16.8	9.34 J	19.6	4.36 J	23.0	2.66 U	17.3	1.75 J	8.32 J	24.4
					MRS03-APN31021078F-SS1001	1	µg/kg	0.848 J	0.498 J	4.10 U	6.45 J	9.39 J	13.2	8.68 J	4.29 J	9.36 J	6.31 U	11.4	2.52 U	8.75 J	1.45 J	4.92 J	12.4
					MRS03-APN31021078F-SS1002	1	µg/kg	0.907 J	1.05 U	4.25 U	5.76 J	8.07 J	13.4	7.84 J	5.30 J	8.81 J	6.53 U	9.57 J	2.61 U	8.52 J	1.20 J	4.07 J	10.4
					MRS03-APN31021078F-SS1003	1	µg/kg	0.774 J	0.347 J	4.20 U	5.54 J	8.28 J	12.1	7.70 J	4.01 J	7.94 J	6.46 U	10.5	2.59 U	8.24 J	1.14 J	4.46 J	10.7
					MRS03-APN31021078F-SS2001	2	µg/kg	1.97 U	1.05 U	4.26 U	4.26 U	4.26 U	6.56 U	6.56 U	4.26 U	4.26 U	6.56 U	2.11 J	2.62 U	6.56 U	1.07 J	6.56 U	6.56 U
					MRS03-APN31021078F-SS2002	2	µg/kg	1.99 U	1.06 U	4.32 U	4.32 U	4.32 U	6.64 U	6.64 U	4.32 U	4.32 U	6.64 U	4.32 U	2.66 U	6.64 U	1.99 U	6.64 U	6.64 U
					MRS03-APN31021078F-SS2003	2	µg/kg	1.97 U	1.05 U	4.28 U	4.28 U	4.28 U	6.58 U	6.58 U	4.28 U	4.28 U	6.58 U	4.28 U	2.63 U	6.58 U	1.97 U	6.58 U	6.58 U
2	31021078G	--	E Thompson Ave	3/4/2020	MRS03-APN31021078G-SS001	0	µg/kg	1.98 U	0.812 J	2.30 J	24.6	27.7	48.1	26.0	17.7	32.8	9.17 J	47.5	2.64 U	27.1	0.991 J	16.8	45.7
					MRS03-APN31021078G-SS002	0	µg/kg	2.25 J	1.43 J	4.03 J	36.0 J	39.6 J	63.2 J	34.9 J	25.9 J	44.9 J	11.3	67.6 J	2.65 U	39.5 J	1.28 J	24.8 J	66.4 J
					MRS03-APN31021078G-SS003	0	µg/kg	0.623 J	0.869 J	3.07 J	27.8	32.5	51.7	28.1	18.2	35.3	7.10 J	57.3	2.64 U	30.8	1.24 J	19.3	54.8
					MRS03-APN31021078G-SS1001	1	µg/kg	1.92 U	1.02 U	4.15 U	3.86 J	5.19 J	8.31 J	5.13 J	3.72 J	6.06 J	2.65 J	8.62 J	2.56 U	5.46 J	1.92 U	3.27 J	8.11 J
					MRS03-APN31021078G-SS1002	1	µg/kg	1.92 UJ	1.02 UJ	4.16 UJ	4.80 J	6.48 J	9.61 J	4.83 J	3.09 J	6.80 J	6.40 UJ	10.7 J	2.56 UJ	5.99 J	1.92 UJ	3.93 J	10.2 J
					MRS03-APN31021078G-SS1003	1	µg/kg	1.92 U	1.02 U	4.15 U	6.16 J	7.72 J	12.6	6.94 J	4.03 J	8.47 J	6.39 U	12.9	2.56 U	7.32 J	1.92 U	4.49 J	12.6
					MRS03-APN31021078G-SS2001	2	µg/kg	1.87 U	0.998 U	4.05 U	4.05 U	4.05 U	6.24 U	6.24 U	4.05 U	4.05 U	6.24 U	4.05 U	2.50 U	6.24 U	1.87 U	6.24 U	6.24 U
					MRS03-APN31021078G-SS2002	2	µg/kg	1.96 U	1.04 U	4.24 U	4.24 U	4.24 U	6.52 U	6.52 U	4.24 U	4.24 U	6.52 U	4.24 U	2.61 U	6.52 U	1.96 U	6.52 U	6.52 U
					MRS03-APN31021078G-SS2003	2	µg/kg	1.97 U	1.05 U	4.28 U	4.28 U	4.28 U	6.58 U	6.58 U	4.28 U	4.28 U	6.58 U	4.28 U	2.63 U	6.58 U	1.97 U	6.58 U	6.58 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
2	31021078H	--	E Thompson Ave	3/5/2020	MRS03-APN31021078H-SS001	0	µg/kg	1.95 U	1.04 U	2.64 J	27.4	40.8	54.6	24.5	22	36.3	7.15 J	52.8	2.59 U	29.3	1.95 U	16.8	54.6
					MRS03-APN31021078H-SS002	0	µg/kg	1.88 U	1.00 U	3.33 J	32.8	46.9	66.5	29.8	24.7	40.6	7.36 J	63.3	2.51 U	36	1.88 U	20.8	61.8
					MRS03-APN31021078H-SS003	0	µg/kg	1.94 U	1.03 U	2.68 J	29.1	43	60.8	26.3	22.6	38.5	6.57 J	54.9	2.58 U	32.8	1.94 U	18	55.7
					MRS03-APN31021078H-SS1001	1	µg/kg	1.89 U	1.01 U	4.10 U	6.17 J	9.01 J	13.3	5.52 J	4.46 J	7.98 J	6.31 U	11.8	2.53 U	6.84 J	1.89 U	3.92 J	12.2
				3/6/2020	MRS03-APN31021078H-SS1002	1	µg/kg	1.93 U	1.03 U	3.14 J	5.50 J	9.19 J	12	5.52 J	4.58 J	6.79 J	6.44 U	9.28 J	2.58 U	6.60 J	1.93 U	6.44 U	9.37 J
					MRS03-APN31021078H-SS1003	1	µg/kg	1.99 U	1.06 U	4.32 U	4.86 J	7.34 J	10.4	4.54 J	4.02 J	6.40 J	6.65 U	9.10 J	2.66 U	5.96 J	1.99 U	2.85 J	9.38 J
				3/5/2020	MRS03-APN31021078H-SS2001	2	µg/kg	1.94 U	1.04 U	4.21 U	4.21 U	4.21 U	6.48 U	6.48 U	4.21 U	4.21 U	6.48 U	4.21 U	2.59 U	6.48 U	1.94 U	6.48 U	6.48 U
				3/6/2020	MRS03-APN31021078H-SS2002	2	µg/kg	1.90 UJ	1.01 UJ	4.12 UJ	4.12 UJ	4.12 UJ	6.34 UJ	6.34 UJ	4.12 UJ	4.12 UJ	6.34 UJ	4.12 UJ	2.54 UJ	6.34 UJ	1.90 UJ	6.34 UJ	6.34 UJ
					MRS03-APN31021078H-SS2003	2	µg/kg	1.98 U	1.05 U	4.28 U	4.28 U	4.28 U	6.59 U	6.59 U	4.28 U	4.28 U	6.59 U	4.28 U	2.64 U	6.59 U	1.98 U	6.59 U	6.59 U
2	31021078I	--	E Thompson Ave	9/17/2020	MRS03-APN31021078I-SS001	0	µg/kg	0.871 J	0.605 J	1.65 J	13.2	19.5	25.4	13.3	11	19.8	4.07 J	28.6	2.58 U	15	1.48 J	11.2	27.9
					MRS03-APN31021078I-SS002	0	µg/kg	0.833 J	0.575 J	1.47 J	13	21	25.9	13.3	10.7	19.8	4.09 J	28	2.48 U	15.6	1.65 J	10.4	28
					MRS03-APN31021078I-SS003	0	µg/kg	0.775 J	0.515 J	1.44 J	11.9	18.9	23	11.4	9.52 J	17.9	3.76 J	25.2	2.58 U	14	1.42 J	9.14 J	24.7
					MRS03-APN31021078I-SS1001	1	µg/kg	1.93 U	0.382 J	4.19 U	7.36 J	8.41 J	12.8	7.73 J	7.42 J	9.82	5.68 J	8.00 J	2.58 U	9.73	0.696 J	3.41 J	7.59 J
					MRS03-APN31021078I-SS1002	1	µg/kg	1.92 U	1.02 U	4.16 U	4.45 J	6.06 J	8.05 J	4.02 J	3.43 J	5.77 J	6.39 U	8.29 J	2.56 U	5.43 J	0.699 J	3.71 J	7.83 J
					MRS03-APN31021078I-SS1003	1	µg/kg	1.94 U	1.03 U	4.20 U	5.12 J	7.80 J	10.2	5.34 J	4.33 J	7.68 J	6.46 U	9.39 J	2.59 U	7.50 J	0.706 J	3.33 J	9.33 J
					MRS03-APN31021078I-SS2001	2	µg/kg	1.98 U	1.06 U	4.29 U	3.86 J	3.57 J	4.34 J	3.61 J	4.06 J	4.24 J	4.13 J	2.53 J	2.64 U	4.81 J	1.98 U	6.60 U	2.38 J
					MRS03-APN31021078I-SS2002	2	µg/kg	1.95 UJ	1.04 UJ	4.23 UJ	4.23 UJ	4.23 UJ	6.51 UJ	6.51 UJ	4.23 UJ	4.23 UJ	6.51 UJ	4.23 UJ	2.60 UJ	6.51 UJ	1.95 UJ	6.51 UJ	6.51 UJ
					MRS03-APN31021078I-SS2003	2	µg/kg	0.643 J	0.998 U	4.05 U	4.05 U	4.05 U	6.23 U	6.23 U	4.05 U	4.05 U	6.23 U	4.05 U	2.49 U	6.23 U	0.910 J	6.23 U	6.23 U
2	31021078J	--	E Thompson Ave	9/17/2020	MRS03-APN31021078J-SS001	0	µg/kg	0.926 J	0.879 J	2.56 J	21.9	30.6	39.1	21	17	30.7	5.70 J	42.3	2.50 U	26.4	1.62 J	17	42.1
				9/18/2020	MRS03-APN31021078J-SS002	0	µg/kg	0.898 J	0.911 J	2.76 J	25	34.5	46.1	24.4	19.7	35.2	6.87 J	49.9	2.58 U	30.1	1.54 J	18.9	49.9
					MRS03-APN31021078J-SS003	0	µg/kg	0.774 J	0.691 J	2.21 J	20.1	28.9	37.2	20	16.4	29.3	5.42 J	41.3	2.41 U	22.5	1.38 J	16.5	40.6
				9/17/2020	MRS03-APN31021078J-SS1001	1	µg/kg	1.78 U	0.950 U	3.86 U	3.92 J	5.81 J	7.34 J	3.81 J	3.19 J	5.49 J	5.94 U	7.21 J	2.38 U	5.03 J	0.678 J	3.10 J	7.01 J
					MRS03-APN31021078J-SS1002	1	µg/kg	35.7	41.6	43.3	51.7	48.1	10.5	5.97 J	5.14 J	54.4	3.63 J	50.5	2.50 U	7.59 J	39.4	47.4	49.1
				9/18/2020	MRS03-APN31021078J-SS1003	1	µg/kg	0.605 J	1.02 U	4.15 U	6.81 J	8.78 J	11.8	6.15 J	5.03 J	8.79 J	2.64 J	13.9	2.55 U	7.65 J	1.91 U	6.48 J	12.7
				9/17/2020	MRS03-APN31021078J-SS2001	2	µg/kg	1.96 U	1.05 U	1.76 J	8.97 J	9.33 J	13	6.51 J	5.27 J	9.85	6.55 U	20.5	2.62 U	7.93 J	1.96 U	10.4	16.9
					MRS03-APN31021078J-SS2002	2	µg/kg	1.96 U	1.05 U	4.25 U	4.25 U	4.25 U	6.53 U	6.53 U	4.25 U	4.25 U	6.53 U	4.25 U	2.61 U	6.53 U	1.96 U	6.53 U	6.53 U
				9/18/2020	MRS03-APN31021078J-SS2003	2	µg/kg	1.97 U	1.05 U	4.26 U	4.26 U	4.26 U	6.55 U	6.55 U	4.26 U	4.26 U	6.55 U	4.26 U	2.62 U	6.55 U	1.97 U	6.55 U	6.55 U
2	31021078K	--	E Thompson Ave	9/21/2020	MRS03-APN31021078K-SS001	0	µg/kg	0.970 J	0.676 J	2.22 J	20.8	29.9	36.9	19.3	16.9 J	29.7	6.49 U	40.6	2.60 U	22.1	1.99 J	16.7	40
					MRS03-APN31021078K-SS002	0	µg/kg	0.981 J	0.728 J	1.98 J	19.9	28.3	37	19.8	17.1	29.9	6.41 U	39.1	2.57 U	21.3	1.93 J	15.0	37.7
					MRS03-APN31021078K-SS003	0	µg/kg	0.940 J	1.03 J	2.56 J	26.5	39	44.9	23.8	21	34.3	9.11 U	48.9	2.43 U	28	1.78 J	19.0	49.4
				9/22/2020	MRS03-APN31021078K-SS1001	1	µg/kg	1.96 U	1.04 U	4.24 U	9.78 U	9.78 U	10.5 J	6.52 U	9.78 U	9.78 U	6.52 U	11.3	2.61 U	9.78 U	1.96 U	4.47 J	11.0
					MRS03-APN31021078K-SS1002	1	µg/kg	1.91 UJ	1.02 UJ	4.14 UJ	4.14 UJ	4.14 UJ	6.37 UJ	6.37 UJ	4.14 UJ	4.14 UJ	6.37 UJ	4.77 J	2.55 UJ	6.37 UJ	1.91 UJ	6.37 UJ	4.76 J
				9/30/2020	MRS03-APN31021078K-SS1003	1	µg/kg	1.97 U	1.05 U	4.26 U	3.47 J	4.26 J	7.13 J	3.45 J	2.63 J	5.36 J	6.56 U	9.84 U	2.62 U	3.93 J	1.97 U	6.56 U	5.62 J
				9/22/2020	MRS03-APN31021078K-SS2001	2	µg/kg	1.89 U	1.01 U	4.10 U	4.10 U	4.10 U	6.30 U	6.30 U	4.10 U	4.10 U	6.30 U	4.10 U	2.52 U	6.30 U	1.89 U	6.30 U	6.30 U
					MRS03-APN31021078K-SS2002	2	µg/kg	1.89 U	1.01 U	4.09 U	4.09 U	4.09 U	6.30 U	6.30 U	4.09 U	4.09 U	6.30 U	4.09 U	2.52 U	6.30 U	1.00 J	6.30 U	6.30 U
					MRS03-APN31021078K-SS2003	2	µg/kg	1.96 U	1.05 U	4.26 U	4.26 U	4.26 U	6.55 U	6.55 U	4.26 U	4.26 U	6.55 U	2.92 J	2.62 U	6.55 U	1.96 U	6.55 U	2.43 J

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
2	31021078L	--	E Thompson Ave	9/22/2020	MRS03-APN31021078L-SS001	0	µg/kg	0.794 J	0.417 J	4.10 U	13.2	15.6	24.6	10.8	8.21 J	18.3	2.76 J	24	2.52 U	12.4	1.85 J	10.3	22.5
					MRS03-APN31021078L-SS002	0	µg/kg	0.865 J	1.06 U	4.32 U	11.5	14.4	20.5	10.4	9.44 J	16.2	3.24 J	19.9	2.66 U	12	1.83 J	8.10 J	19.2
					MRS03-APN31021078L-SS003	0	µg/kg	1.82 UJ	0.326 J	3.95 UJ	75.2	70.2	85.1	9.01 J	6.67 J	75.5	56.6	92.3	47.7	10.3 J	1.05 J	71.5	18.9 J
				9/23/2020	MRS03-APN31021078L-SS1001	1	µg/kg	1.97 U	1.05 U	4.26 U	3.13 J	3.82 J	5.22 J	2.51 J	2.26 J	4.15 J	6.55 U	5.95 J	2.62 U	2.90 J	1.25 J	2.88 J	5.47 J
					MRS03-APN31021078L-SS1002	1	µg/kg	1.99 U	1.06 U	4.31 U	3.39 J	4.37 J	6.28 J	3.05 J	2.59 J	4.79 J	6.64 U	6.05 J	2.65 U	3.40 J	1.26 J	2.74 J	5.75 J
					MRS03-APN31021078L-SS1003	1	µg/kg	0.581 J	0.305 J	4.01 U	9.41	9.53	13.8	6.25 J	5.48 J	10.9	6.17 U	17.8	2.47 U	6.96 J	1.21 J	10	15.5
					MRS03-APN31021078L-SS2001	2	µg/kg	1.89 U	1.01 U	4.10 U	4.10 U	4.10 U	2.61 J	6.31 U	4.10 U	2.22 J	6.31 U	2.57 J	2.53 U	6.31 U	1.06 J	6.31 U	2.11 J
					MRS03-APN31021078L-SS2002	2	µg/kg	1.87 U	0.997 U	4.05 U	4.05 U	4.05 U	6.23 U	6.23 U	4.05 U	4.05 U	6.23 U	4.05 U	2.49 U	6.23 U	1.02 J	6.23 U	6.23 U
					MRS03-APN31021078L-SS2003	2	µg/kg	1.97 U	1.05 U	4.27 U	2.93 J	1.93 J	3.72 J	6.57 U	4.27 U	8.12 J	6.57 U	5.16 J	2.63 U	6.57 U	1.09 J	6.57 U	4.95 J
2	31021078M	--	E Thompson Ave	9/23/2020	MRS03-APN31021078M-SS001	0	µg/kg	1.61 J	5.90 J	15.5	47.2	50	68	34	31.5	51.2	9.46 U	106	4.06 J	39.1	4.51 J	83.2	84.8
					MRS03-APN31021078M-SS002	0	µg/kg	0.731 J	56.4	1.67 J	122	23.5 J	30.7 J	17.6	89.8	24.2 J	58.9	111	57.3	19.7 J	52.4	80.9	28.6 J
					MRS03-APN31021078M-SS003	0	µg/kg	1.14 J	0.864 J	2.31 J	17.7 J	20.2 J	31.6 J	14.5 J	10.3 J	23.3 J	6.31 UJ	35.8 J	2.52 UJ	15.7 J	2.44 J	18.2 J	32.7 J
					MRS03-APN31021078M-SS1001	1	µg/kg	1.85 U	0.341 J	4.00 U	9.23 U	9.23 U	9.23 U	6.15 U	4.00 U	9.23 U	6.15 U	8.06 J	2.46 U	6.15 U	0.976 J	3.68 J	7.63 J
					MRS03-APN31021078M-SS1002	1	µg/kg	1.96 U	1.04 U	4.24 U	9.79 U	9.79 U	9.79 U	6.53 U	4.24 U	9.79 U	6.53 U	8.54 J	2.61 U	6.53 U	1.18 J	4.75 J	7.69 J
					MRS03-APN31021078M-SS1003	1	µg/kg	0.656 J	0.345 J	4.30 U	9.92 U	9.92 U	9.92 U	6.61 U	4.30 U	9.92 U	6.61 U	8.49 J	2.65 U	6.61 U	1.20 J	4.10 J	8.15 J
					MRS03-APN31021078M-SS2001	2	µg/kg	1.94 U	1.03 U	4.20 U	4.20 U	4.20 U	6.46 U	6.46 U	4.20 U	4.20 U	6.46 U	4.20 U	2.58 U	6.46 U	0.911 J	6.46 U	6.46 U
					MRS03-APN31021078M-SS2002	2	µg/kg	1.98 UJ	1.06 UJ	4.28 UJ	4.28 UJ	4.28 UJ	6.59 UJ	6.59 UJ	4.28 UJ	4.28 UJ	6.59 UJ	4.28 UJ	2.64 UJ	6.59 UJ	1.06 J	6.59 UJ	6.59 UJ
				9/30/2020	MRS03-APN31021078M-SS2003	2	µg/kg	1.82 U	0.970 U	3.94 U	6.11 J	5.11 J	7.82 J	3.48 J	2.82 J	5.92 J	6.06 U	11.7	2.42 U	3.77 J	9.09 U	9.09 U	9.25
2	31021078N	--	E Thompson Ave	9/24/2020	MRS03-APN31021078N-SS001	0	µg/kg	0.987 J	0.443 J	4.17 U	11.6	14.6	19.5	10.3	8.95 J	15.6	6.41 U	21.5	2.57 U	11.3	2.23 J	6.43 J	20.8
					MRS03-APN31021078N-SS002	0	µg/kg	1.13 J	0.665 J	1.90 J	14.6 J	15.4 J	22.3 J	10.3 J	9.75 J	17.8 J	2.66 J	28.6 J	2.58 UJ	11.8 J	2.46 J	17.4 J	25.6 J
					MRS03-APN31021078N-SS003	0	µg/kg	0.966 J	0.462 J	4.15 U	10.8	13.7	18.5	9.06 J	8.20 J	15.1	6.39 U	18.7	2.56 U	10.2	2.09 J	8.05 J	18.7
					MRS03-APN31021078N-SS1001	1	µg/kg	0.692 J	0.343 J	4.12 U	3.30 J	4.08 J	5.64 J	2.88 J	2.33 J	4.23 J	6.35 U	5.87 J	2.54 U	3.30 J	2.05 J	2.90 J	5.47 J
					MRS03-APN31021078N-SS1002	1	µg/kg	0.694 J	0.970 UJ	3.94 UJ	3.94 UJ	1.87 J	2.49 J	6.06 UJ	3.94 UJ	1.92 J	6.06 UJ	2.57 J	2.42 UJ	6.06 UJ	1.43 J	6.06 UJ	2.49 J
					MRS03-APN31021078N-SS1003	1	µg/kg	0.597 J	1.03 U	4.19 U	2.94 J	3.75 J	5.26 J	2.56 J	2.16 J	3.89 J	6.44 U	5.47 J	2.58 U	2.92 J	1.47 J	2.39 J	5.15 J
					MRS03-APN31021078N-SS2001	2	µg/kg	1.95 U	1.04 U	4.23 U	4.23 U	4.23 U	6.50 U	6.50 U	4.23 U	4.23 U	6.50 U	3.18 J	2.60 U	6.50 U	1.24 J	3.13 J	2.40 J
					MRS03-APN31021078N-SS2002	2	µg/kg	0.647 J	1.03 U	4.19 U	4.19 U	4.19 U	6.45 U	6.45 U	4.19 U	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	1.34 J	6.45 U	6.45 U
					MRS03-APN31021078N-SS2003	2	µg/kg	0.654 J	1.03 U	4.20 U	4.20 U	4.20 U	6.46 U	6.46 U	4.20 U	4.20 U	6.46 U	4.20 U	2.58 U	6.46 U	1.51 J	6.46 U	6.46 U
3	31038002A	--	E Thompson Ave	9/29/2020	MRS03-APN31038002A-SS001	0	µg/kg	0.816 J	1.03 U	4.20 U	2.14 J	3.71 J	4.95 J	2.36 J	1.99 J	3.91 J	6.46 U	4.91 J	2.58 U	2.62 J	1.86 J	2.32 J	4.68 J
					MRS03-APN31038002A-SS002	0	µg/kg	0.808 J	0.985 U	4.00 U	2.51 J	4.01 J	6.08 J	2.88 J	2.29 J	4.21 J	6.15 U	4.60 J	2.46 U	3.79 J	1.96 J	2.15 J	4.29 J
					MRS03-APN31038002A-SS003	0	µg/kg	0.980 J	1.04 U	4.23 U	2.53 J	3.73 J	4.98 J	2.50 J	2.09 J	3.62 J	6.51 U	4.30 J	2.60 U	2.89 J	2.50 J	6.51 U	4.29 J
					MRS03-APN31038002A-SS1001	1	µg/kg	1.85 U	0.984 U	4.00 U	4.00 U	4.00 U	6.15 U	6.15 U	4.00 U	4.00 U	6.15 U	4.00 U	2.46 U	6.15 U	2.11 J	6.15 U	6.15 U
					MRS03-APN31038002A-SS1002	1	µg/kg	1.97 U	1.05 U	4.28 U	4.28 U	4.28 U	6.58 U	6.58 U	4.28 U	4.28 U	6.58 U	4.28 U	2.63 U	6.58 U	1.97 U	6.58 U	6.58 U
				9/30/2020	MRS03-APN31038002A-SS1003	1	µg/kg	1.94 U	1.03 U	4.20 U	4.20 U	4.20 U	6.46 U	6.46 U	4.20 U	4.20 U	6.46 U	4.20 U	2.59 U	6.46 U	1.94 U	6.46 U	6.46 U
				9/29/2020	MRS03-APN31038002A-SS2001	2	µg/kg	1.95 U	1.04 U	4.23 U	4.23 U	4.23 U	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	4.23 U	2.60 U	6.51 U	1.10 J	6.51 U	6.51 U
					MRS03-APN31038002A-SS2002	2	µg/kg	1.99 U	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	1.99 U	6.63 U	6.63 U
				9/30/2020	MRS03-APN31038002A-SS2003	2	µg/kg	1.90 U	1.01 U	4.12 U	4.12 U	4.12 U	6.33 U	6.33 U	4.12 U	4.12 U	6.33 U	4.12 U	2.53 U	6.33 U	1.17 J	6.33 U	6.33 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
3	31038002B	--	E Thompson Ave	10/20/2020	MRS03-APN31038002B-SS001	0	µg/kg	1.05 J	0.918 J	2.99 J	10.8 J	4.16 U	14.9 J	7.55 J	5.60 J	19.3 J	6.40 U	18.6 J	1.13 J	7.49 J	2.08 J	13.1 J	17.6 J
					MRS03-APN31038002B-SS002	0	µg/kg	1.64 J	0.939 J	1.55 J	6.82 J	4.23 U	11.3 J	6.37 J	4.51 J	9.14 J	6.50 U	13.6 J	1.03 J	6.59 J	2.45 J	8.67 J	12.0 J
					MRS03-APN31038002B-SS003	0	µg/kg	1.34 J	0.562 J	1.54 J	8.41 J	9.87 J	13.7 J	6.42 J	5.84 J	14.1 J	6.31 U	14.2 J	2.52 U	6.86 J	2.74 J	7.88 J	12.3 J
					MRS03-APN31038002B-SS1001	1	µg/kg	1.94 UJ	1.04 UJ	4.20 UJ	2.73 J	3.41 J	4.63 J	2.31 J	4.20 UJ	3.94 J	6.47 UJ	4.78 J	2.59 UJ	2.28 J	1.94 UJ	2.41 J	5.29 J
				10/21/2020	MRS03-APN31038002B-SS1002	1	µg/kg	1.97 U	1.05 U	4.28 U	4.28 U	4.28 U	6.58 U	6.58 U	4.28 U	4.28 U	6.58 U	1.99 J	2.63 U	6.58 U	1.20 J	6.58 U	6.58 U
					MRS03-APN31038002B-SS1003	1	µg/kg	1.97 U	1.05 U	4.26 U	4.26 U	1.90 J	2.56 J	6.56 U	4.26 U	4.26 U	6.56 U	4.07 J	2.62 U	6.56 U	1.97 U	2.83 J	3.36 J
				10/20/2020	MRS03-APN31038002B-SS2001	2	µg/kg	1.99 U	1.06 U	4.32 U	4.32 U	4.32 U	6.64 U	6.64 U	4.32 U	2.18 J	6.64 U	4.32 U	2.66 U	6.64 U	1.99 U	6.64 U	6.64 U
				10/21/2020	MRS03-APN31038002B-SS2002	2	µg/kg	1.98 U	1.06 U	4.29 U	4.29 U	4.29 U	6.61 U	6.61 U	4.29 U	4.29 U	6.61 U	4.29 U	2.64 U	6.61 U	1.98 U	6.61 U	6.61 U
					MRS03-APN31038002B-SS2003	2	µg/kg	0.654 J	1.05 U	4.25 U	4.25 U	4.25 U	2.75 J	6.54 U	4.25 U	4.10 J	6.54 U	17.1	2.62 U	6.54 U	0.891 J	13.6	11.4
3	31038002C	--	E Thompson Ave	9/28/2020	MRS03-APN31038002C-SS001	0	µg/kg	1.98 UJ	1.06 UJ	4.29 UJ	2.83 J	3.80 J	5.44 J	2.40 J	4.29 UJ	4.33 J	6.60 UJ	9.90 UJ	2.64 UJ	2.64 J	9.90 UJ	6.60 UJ	5.57 J
					MRS03-APN31038002C-SS002	0	µg/kg	1.95 UJ	1.04 UJ	4.23 UJ	2.90 J	3.55 J	5.23 J	2.43 J	4.23 UJ	3.94 J	6.51 UJ	9.77 UJ	2.61 UJ	2.65 J	9.77 UJ	6.51 UJ	4.97 J
					MRS03-APN31038002C-SS003	0	µg/kg	9.63 UJ	1.03 UJ	4.17 UJ	2.21 J	4.17 UJ	4.15 J	6.42 UJ	4.17 UJ	3.25 J	6.42 UJ	9.63 UJ	2.57 UJ	6.42 UJ	10.5 J	6.42 UJ	4.65 J
				9/29/2020	MRS03-APN31038002C-SS1001	1	µg/kg	1.99 U	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	1.99 U	6.63 U	2.40 J
					MRS03-APN31038002C-SS1002	1	µg/kg	1.80 U	0.958 U	3.89 U	3.89 U	3.89 U	5.98 U	5.98 U	3.89 U	3.89 U	5.98 U	3.89 U	2.39 U	5.98 U	1.80 U	5.98 U	5.98 U
					MRS03-APN31038002C-SS1003	1	µg/kg	1.77 U	0.946 U	3.84 U	3.84 U	3.84 U	5.91 U	5.91 U	3.84 U	3.84 U	5.91 U	3.84 U	2.36 U	5.91 U	8.87 U	5.91 U	5.91 U
					MRS03-APN31038002C-SS2001	2	µg/kg	1.86 UJ	0.991 UJ	4.02 UJ	4.02 UJ	4.02 UJ	6.19 UJ	6.19 UJ	4.02 UJ	4.02 UJ	6.19 UJ	4.02 UJ	2.48 UJ	6.19 UJ	1.86 UJ	6.19 UJ	6.19 UJ
					MRS03-APN31038002C-SS2002	2	µg/kg	1.94 UJ	1.04 UJ	4.21 UJ	4.21 UJ	4.21 UJ	6.47 UJ	6.47 UJ	4.21 UJ	4.21 UJ	6.47 UJ	4.21 UJ	2.59 UJ	6.47 UJ	9.71 UJ	6.47 UJ	6.47 UJ
					MRS03-APN31038002C-SS2003	2	µg/kg	1.80 UJ	0.958 UJ	3.89 UJ	3.89 UJ	3.89 UJ	5.99 UJ	5.99 UJ	3.89 UJ	3.89 UJ	5.99 UJ	3.89 UJ	2.40 UJ	5.99 UJ	8.98 UJ	5.99 UJ	5.99 UJ
3	31038002D	--	E Thompson Ave	9/24/2020	MRS03-APN31038002D-SS001	0	µg/kg	1.03 J	1.03 UJ	4.19 UJ	1.74 J	2.36 J	3.56 J	6.45 UJ	4.19 UJ	3.17 J	6.45 UJ	3.13 J	2.58 UJ	6.45 UJ	2.21 J	6.45 UJ	2.54 J
					MRS03-APN31038002D-SS002	0	µg/kg	1.06 J	1.00 UJ	4.06 UJ	4.06 UJ	4.06 UJ	2.64 J	6.25 UJ	4.06 UJ	2.47 J	6.25 UJ	3.12 J	2.50 UJ	6.25 UJ	2.32 J	6.25 UJ	2.57 J
					MRS03-APN31038002D-SS003	0	µg/kg	1.02 J	1.05 U	4.26 U	4.26 U	4.26 U	3.19 J	6.55 U	4.26 U	2.93 J	6.55 U	3.04 J	2.62 U	6.55 U	2.38 J	6.55 U	2.69 J
					MRS03-APN31038002D-SS1001	1	µg/kg	0.755 J	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	1.79 J	6.63 U	6.63 U
					MRS03-APN31038002D-SS1002	1	µg/kg	0.639 J	1.06 U	4.32 U	4.32 U	4.32 U	6.65 U	6.65 U	4.32 U	4.32 U	6.65 U	4.32 U	2.66 U	6.65 U	1.27 J	6.65 U	6.65 U
				9/25/2020	MRS03-APN31038002D-SS1003	1	µg/kg	1.98 U	1.05 U	4.28 U	4.28 U	4.28 U	6.59 U	6.59 U	4.28 U	2.22 J	6.59 U	2.01 J	2.64 U	6.59 U	6.39 J	6.59 U	6.59 U
				9/24/2020	MRS03-APN31038002D-SS2001	2	µg/kg	0.713 J	1.02 U	4.13 U	4.13 U	4.13 U	6.36 U	6.36 U	4.13 U	4.13 U	6.36 U	4.13 U	2.54 U	6.36 U	1.67 J	6.36 U	6.36 U
					MRS03-APN31038002D-SS2002	2	µg/kg	1.96 U	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.61 U	6.54 U	1.34 J	6.54 U	6.54 U
				9/25/2020	MRS03-APN31038002D-SS2003	2	µg/kg	0.897 J	0.972 U	3.95 U	3.95 U	3.95 U	6.08 U	6.08 U	3.95 U	3.95 U	6.08 U	3.95 U	2.43 U	6.08 U	1.59 J	6.08 U	6.08 U
3	31038002E	--	E Thompson Ave	10/8/2020	MRS03-APN31038002E-SS001	0	µg/kg	1.55 J	4.32 J	6.81 J	25.7	25.7	37.7	15.7	15.4	26.5	4.28 J	63.8	2.63 U	20.4	2.77 J	46.8	51.3
					MRS03-APN31038002E-SS002	0	µg/kg	1.30 J	1.38 J	2.93 J	14.2	16.4	22.4	10.2	9.38 J	15.8	2.85 J	32.9	2.59 U	12.4	2.68 J	18.9	28.3
					MRS03-APN31038002E-SS003	0	µg/kg	2.18 J	14.0	27.5	53.7	50.5	64.8	26.7	28.8	48.1	8.09 J	121	9.74 J	35.2	3.17 J	114	100
					MRS03-APN31038002E-SS1001	1	µg/kg	0.641 J	1.03 U	4.19 U	2.12 J	4.19 U	4.50 J	2.35 J	2.64 J	3.03 J	6.44 U	3.63 J	2.58 U	3.32 J	1.23 J	6.44 U	3.09 J
					MRS03-APN31038002E-SS1002	1	µg/kg	2.00 U	1.06 U	4.32 U	2.68 J	3.17 J	4.85 J	2.26 J	2.01 J	3.50 J	6.65 U	4.97 J	2.66 U	2.90 J	2.00 U	6.65 U	4.47 J
				10/9/2020	MRS03-APN31038002E-SS1003	1	µg/kg	1.93 U	1.03 U	4.18 U	2.55 J	3.30 J	4.10 J	6.43 U	4.18 U	2.89 J	6.43 U	6.22 J	2.57 U	2.28 J	1.93 U	5.44 J	4.80 J
				10/8/2020	MRS03-APN31038002E-SS2001	2	µg/kg	1.88 U	1.00 U	4.08 U	4.08 U	4.08 U	6.27 U	6.27 U	4.08 U	4.08 U	6.27 U	4.08 U	2.51 U	6.27 U	1.88 U	6.27 U	6.27 U
					MRS03-APN31038002E-SS2002	2	µg/kg	1.80 U	0.962 U	3.91 U	3.91 U	3.91 U	6.01 U	6.01 U	3.91 U	3.91 U	6.01 U	3.91 U	2.41 U	6.01 U	0.792 J	6.01 U	6.01 U
				10/9/2020	MRS03-APN31038002E-SS2003	2	µg/kg	1.79 U	0.954 U	3.87 U	3.87 U	3.87 U	5.96 U	5.96 U	3.87 U	3.87 U	5.96 U	3.87 U	2.38 U	5.96 U	1.12 J	5.96 U	5.96 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
3	31038002F	--	E Thompson Ave	10/14/2020	MRS03-APN31038002F-SS001	0	µg/kg	1.99 J	1.05 U	4.27 U	1.78 J	4.27 U	3.82 J	6.57 U	4.27 U	2.77 J	6.57 U	3.64 J	2.63 U	6.57 U	3.77 J	6.57 U	3.36 J
					MRS03-APN31038002F-SS002	0	µg/kg	1.90 J	1.05 U	4.26 U	3.87 J	4.26 U	5.62 J	3.60 J	3.99 J	4.81 J	2.99 J	4.09 J	2.62 U	4.58 J	3.63 J	6.56 U	3.76 J
					MRS03-APN31038002F-SS003	0	µg/kg	2.28 J	0.559 J	4.18 U	3.26 J	4.18 U	5.63 J	2.35 J	2.16 J	4.02 J	6.44 U	6.99 J	2.57 U	3.18 J	3.92 J	3.77 J	6.10 J
					MRS03-APN31038002F-SS1001	1	µg/kg	0.965 J	1.03 U	4.17 U	4.17 U	4.17 U	6.41 U	6.41 U	4.17 U	4.17 U	6.41 U	4.17 U	2.57 U	6.41 U	1.76 J	6.41 U	6.41 U
					MRS03-APN31038002F-SS1002	1	µg/kg	1.03 J	1.07 U	4.33 U	4.33 U	4.33 U	6.67 U	6.67 U	4.33 U	4.33 U	6.67 U	4.33 U	2.67 U	6.67 U	1.96 J	6.67 U	6.67 U
					MRS03-APN31038002F-SS1003	1	µg/kg	1.13 J	1.01 U	4.11 U	4.11 U	4.11 U	6.33 U	6.33 U	4.11 U	4.11 U	6.33 U	4.11 U	2.53 U	6.33 U	1.95 J	6.33 U	6.33 U
					MRS03-APN31038002F-SS2001	2	µg/kg	0.779 J	1.01 U	4.10 U	4.10 U	4.10 U	6.30 U	6.30 U	4.10 U	4.10 U	6.30 U	4.10 U	2.52 U	6.30 U	1.54 J	6.30 U	6.30 U
					MRS03-APN31038002F-SS2002	2	µg/kg	0.902 J	1.03 U	4.16 U	4.16 U	4.16 U	6.41 U	6.41 U	4.16 U	4.16 U	6.41 U	4.16 U	2.56 U	6.41 U	1.77 J	6.41 U	6.41 U
					MRS03-APN31038002F-SS2003	2	µg/kg	0.892 J	1.02 U	4.13 U	4.13 U	4.13 U	6.36 U	6.36 U	4.13 U	4.13 U	6.36 U	4.13 U	2.54 U	6.36 U	1.51 J	6.36 U	6.36 U
3	31038002G	--	E Thompson Ave	10/13/2020	MRS03-APN31038002G-SS001	0	µg/kg	2.25 J	0.954 U	3.88 U	3.88 U	3.88 U	2.56 J	5.96 U	3.88 U	2.11 J	5.96 U	3.69 J	2.39 U	5.96 U	2.68 J	2.91 J	3.21 J
					MRS03-APN31038002G-SS002	0	µg/kg	1.72 J	1.03 U	4.20 U	4.20 U	4.20 U	6.46 U	6.46 U	4.20 U	4.20 U	6.46 U	2.62 J	2.58 U	6.46 U	2.72 J	6.46 U	2.31 J
					MRS03-APN31038002G-SS003	0	µg/kg	1.71 J	1.06 U	4.30 U	4.30 U	4.30 U	2.50 J	6.61 U	4.30 U	2.11 J	6.61 U	3.31 J	2.64 U	6.61 U	2.75 J	3.38 J	2.89 J
					MRS03-APN31038002G-SS1001	1	µg/kg	0.753 J	1.01 U	4.12 U	4.12 U	4.12 U	6.34 U	6.34 U	4.12 U	4.12 U	6.34 U	4.12 U	2.54 U	6.34 U	1.08 J	6.34 U	6.34 U
					MRS03-APN31038002G-SS1002	1	µg/kg	0.888 J	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	1.36 J	6.63 U	6.63 U
					MRS03-APN31038002G-SS1003	1	µg/kg	1.99 UJ	1.06 UJ	4.32 UJ	4.32 UJ	4.32 UJ	6.65 UJ	6.65 UJ	4.32 UJ	4.32 UJ	6.65 UJ	4.32 UJ	2.66 UJ	6.65 UJ	0.824 J	6.65 UJ	6.65 UJ
					MRS03-APN31038002G-SS2001	2	µg/kg	0.696 J	1.04 UJ	4.22 UJ	4.22 UJ	4.22 UJ	6.49 UJ	6.49 UJ	4.22 UJ	4.22 UJ	6.49 UJ	4.22 UJ	2.60 UJ	6.49 UJ	1.95 UJ	6.49 UJ	6.49 UJ
					MRS03-APN31038002G-SS2002	2	µg/kg	1.88 UJ	1.00 UJ	4.07 UJ	4.07 UJ	4.07 UJ	6.27 UJ	6.27 UJ	4.07 UJ	4.07 UJ	6.27 UJ	4.07 UJ	2.51 UJ	6.27 UJ	0.892 J	6.27 UJ	6.27 UJ
					MRS03-APN31038002G-SS2003	2	µg/kg	0.710 J	1.01 UJ	4.12 UJ	4.12 UJ	4.12 UJ	6.34 UJ	6.34 UJ	4.12 UJ	4.12 UJ	6.34 UJ	4.12 UJ	2.54 UJ	6.34 UJ	0.884 J	6.34 UJ	6.34 UJ
3	31038002H	--	E Thompson Ave	10/20/2020	MRS03-APN31038002H-SS001	0	µg/kg	0.719 J	1.06 U	4.30 U	4.30 U	4.30 U	2.56 J	6.62 U	4.30 U	4.30 U	6.62 U	2.45 J	2.65 U	6.62 U	2.00 J	6.62 U	2.24 J
					MRS03-APN31038002H-SS002	0	µg/kg	0.760 J	1.05 U	4.26 U	2.66 J	4.26 U	4.73 J	2.78 J	2.81 J	3.87 J	6.56 U	4.35 J	2.63 U	3.17 J	2.41 J	2.26 J	3.80 J
					MRS03-APN31038002H-SS003	0	µg/kg	0.878 J	0.954 U	3.88 U	3.88 U	3.88 U	2.84 J	5.96 U	3.88 U	2.20 J	5.96 U	3.06 J	2.39 U	5.96 U	2.19 J	5.96 U	2.65 J
					MRS03-APN31038002H-SS1001	1	µg/kg	1.77 U	0.945 U	3.84 U	3.84 U	3.84 U	5.91 U	5.91 U	3.84 U	3.84 U	5.91 U	3.84 U	2.36 U	5.91 U	1.77 U	5.91 U	5.91 U
					MRS03-APN31038002H-SS1002	1	µg/kg	1.83 U	0.979 U	3.98 U	3.98 U	3.98 U	6.12 U	6.12 U	3.98 U	3.98 U	6.12 U	3.98 U	2.45 U	6.12 U	0.741 J	6.12 U	6.12 U
					MRS03-APN31038002H-SS1003	1	µg/kg	1.77 U	0.945 U	3.84 U	3.84 U	3.84 U	5.90 U	5.90 U	3.84 U	3.84 U	5.90 U	3.84 U	2.36 U	5.90 U	1.77 U	5.90 U	5.90 U
					MRS03-APN31038002H-SS2001	2	µg/kg	1.83 U	0.977 U	3.97 U	3.97 U	3.97 U	6.11 U	6.11 U	3.97 U	3.97 U	6.11 U	3.97 U	2.44 U	6.11 U	1.83 U	6.11 U	6.11 U
					MRS03-APN31038002H-SS2002	2	µg/kg	1.93 U	1.03 U	4.19 U	4.19 U	4.19 U	6.45 U	6.45 U	4.19 U	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	1.93 U	6.45 U	6.45 U
					MRS03-APN31038002H-SS2003	2	µg/kg	1.94 U	1.03 U	4.20 U	4.20 U	4.20 U	6.46 U	6.46 U	4.20 U	4.20 U	6.46 U	4.20 U	2.59 U	6.46 U	1.94 U	6.46 U	6.46 U
3	31038002I	--	E Thompson Ave	10/14/2020	MRS03-APN31038002I-SS001	0	µg/kg	1.41 J	0.705 J	4.03 U	5.47 J	6.64 J	10.6	5.68 J	4.28 J	7.78 J	6.20 U	10.9	2.48 U	5.68 J	2.97 J	5.49 J	9.98
					MRS03-APN31038002I-SS002	0	µg/kg	1.35 J	1.05 U	4.26 U	3.99 J	7.36 J	8.72 J	4.83 J	3.17 J	7.25 J	6.55 U	10.8 J	2.62 U	4.32 J	2.89 J	5.87 J	9.62 J
					MRS03-APN31038002I-SS003	0	µg/kg	1.57 J	0.424 J	4.08 U	4.25 J	7.07 J	7.71 J	4.25 J	2.96 J	6.61 J	6.28 U	9.37 J	2.51 U	4.40 J	2.79 J	4.83 J	8.58 J
				10/15/2020	MRS03-APN31038002I-SS1001	1	µg/kg	0.941 J	0.997 U	4.05 U	4.05 U	1.73 J	6.23 U	6.23 U	4.05 U	4.05 U	6.23 U	2.07 J	2.49 U	6.23 U	1.70 J	6.23 U	6.23 U
					MRS03-APN31038002I-SS1002	1	µg/kg	1.02 J	1.04 U	4.22 U	3.54 J	3.77 J	5.20 J	2.25 J	4.22 U	3.73 J	6.50 U	7.06 J	2.60 U	2.88 J	1.90 J	3.97 J	5.76 J
					MRS03-APN31038002I-SS1003	1	µg/kg	1.08 J	0.511 J	4.22 U	2.34 J	2.73 J	3.34 J	6.50 U	4.22 U	2.46 J	6.50 U	5.12 J	2.60 U	6.50 U	1.63 J	4.18 J	4.22 J
					MRS03-APN31038002I-SS2001	2	µg/kg	0.925 J	0.990 U	4.02 U	4.02 U	4.02 U	6.18 U	6.18 U	4.02 U	4.02 U	6.18 U	4.02 U	2.47 U	6.18 U	1.55 J	6.18 U	6.18 U
					MRS03-APN31038002I-SS2002	2	µg/kg	1.05 J	1.01 U	4.12 U	4.12 U	4.12 U	6.34 U	6.34 U	4.12 U	4.12 U	6.34 U	4.12 U	2.54 U	6.34 U	1.72 J	6.34 U	6.34 U
					MRS03-APN31038002I-SS2003	2	µg/kg	0.936 J	1.02 U	4.15 U	4.15 U	4.15 U	6.39 U	6.39 U	4.15 U	4.15 U	6.39 U	4.15 U	2.55 U	6.39 U	1.60 J	6.39 U	6.39 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
3	31038002J	--	E Thompson Ave	10/15/2020	MRS03-APN31038002J-SS001	0	µg/kg	1.45 J	0.408 J	4.05 U	3.70 J	4.05 U	7.09 J	3.72 J	3.44 J	5.72 J	6.23 U	7.57 J	2.49 U	3.96 J	2.71 J	3.66 J	7.14 J
					MRS03-APN31038002J-SS002	0	µg/kg	3.28 J	1.04 UJ	4.24 UJ	3.61 J	5.83 J	6.65 J	3.36 J	3.49 J	5.37 J	6.52 UJ	6.88 J	2.61 UJ	3.73 J	2.98 J	3.10 J	6.19 J
					MRS03-APN31038002J-SS003	0	µg/kg	1.13 J	0.447 J	4.04 U	5.29 J	9.30 J	10.4	5.66 J	4.87 J	7.35 J	6.22 U	9.47	2.49 U	6.34 J	2.40 J	3.74 J	9.01 J
					MRS03-APN31038002J-SS1001	1	µg/kg	0.729 J	1.05 U	4.25 U	4.25 U	1.72 J	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	2.16 J	2.62 U	6.54 U	1.18 J	6.54 U	6.54 U
					MRS03-APN31038002J-SS1002	1	µg/kg	0.817 J	0.556 J	4.17 U	6.76 J	6.61 J	10.7	7.07 J	7.58 J	8.72 J	5.42 J	7.85 J	2.57 U	8.33 J	1.40 J	4.14 J	6.58 J
				12/15/2020	MRS03-APN31038002J-SS1003R	1	µg/kg	1.34 J	1.01 U	4.12 U	4.12 U	4.12 U	6.34 U	6.34 U	4.12 U	4.12 U	6.34 U	9.51 U	2.54 U	6.34 U	2.01 J	6.34 U	6.34 U
				10/15/2020	MRS03-APN31038002J-SS2001	2	µg/kg	1.83 U	0.977 U	3.97 U	3.97 U	3.97 U	6.10 U	6.10 U	3.97 U	3.97 U	6.10 U	3.97 U	2.44 U	6.10 U	1.83 U	6.10 U	6.10 U
					MRS03-APN31038002J-SS2002	2	µg/kg	0.705 J	0.965 U	3.92 U	3.92 U	3.92 U	6.03 U	6.03 U	3.92 U	3.92 U	6.03 U	3.92 U	2.41 U	6.03 U	1.20 J	6.03 U	6.03 U
				10/16/2020	MRS03-APN31038002J-SS2003	2	µg/kg	0.610 J	1.05 U	4.26 U	4.26 U	4.26 U	6.56 U	6.56 U	4.26 U	4.26 U	6.56 U	4.26 U	2.63 U	6.56 U	1.01 J	6.56 U	6.56 U
3	31038002K	--	E Thompson Ave	10/7/2020	MRS03-APN31038002K-SS001	0	µg/kg	1.99 U	1.06 U	4.30 U	5.73 J	8.37 J	10.5	5.28 J	4.21 J	7.06 J	6.62 U	10.5	2.65 U	6.25 J	2.34 J	5.00 J	9.59 J
					MRS03-APN31038002K-SS002	0	µg/kg	1.91 UJ	1.02 UJ	4.13 UJ	5.10 J	7.02 J	8.68 J	4.55 J	4.20 J	6.50 J	6.35 UJ	9.03 J	2.54 UJ	5.44 J	2.22 J	3.72 J	8.51 J
					MRS03-APN31038002K-SS003	0	µg/kg	1.94 UJ	1.04 UJ	4.21 UJ	3.46 J	4.21 UJ	6.34 J	3.10 J	2.40 J	4.65 J	6.48 UJ	7.73 J	2.59 UJ	3.74 J	2.44 J	3.77 J	7.37 J
					MRS03-APN31038002K-SS1001	1	µg/kg	1.95 U	1.04 U	4.23 U	4.23 U	4.23 U	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	4.23 U	2.61 U	6.51 U	1.95 U	6.51 U	6.51 U
					MRS03-APN31038002K-SS1002	1	µg/kg	1.92 U	1.02 U	4.16 U	4.16 U	4.16 U	6.40 U	6.40 U	4.16 U	4.16 U	6.40 U	4.16 U	2.56 U	6.40 U	1.92 U	6.40 U	6.40 U
					MRS03-APN31038002K-SS1003	1	µg/kg	1.99 U	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	1.99 U	6.63 U	6.63 U
					MRS03-APN31038002K-SS2001	2	µg/kg	1.97 U	1.05 U	4.26 U	4.26 U	4.26 U	6.56 U	6.56 U	4.26 U	4.26 U	6.56 U	4.26 U	2.63 U	6.56 U	1.97 U	6.56 U	6.56 U
					MRS03-APN31038002K-SS2002	2	µg/kg	1.98 U	1.06 U	4.29 U	4.29 U	4.29 U	6.61 U	6.61 U	4.29 U	4.29 U	6.61 U	4.29 U	2.64 U	6.61 U	1.98 U	6.61 U	6.61 U
					MRS03-APN31038002K-SS2003	2	µg/kg	1.95 UJ	1.04 UJ	4.23 UJ	4.23 UJ	4.23 UJ	6.51 UJ	6.51 UJ	4.23 UJ	4.23 UJ	6.51 UJ	4.23 UJ	2.60 UJ	6.51 UJ	1.95 UJ	6.51 UJ	6.51 UJ
3	31038002L	--	E Thompson Ave	10/5/2020	MRS03-APN31038002L-SS001	0	µg/kg	1.93 U	1.03 U	4.17 U	2.65 J	2.93 J	4.97 J	2.47 J	4.17 U	3.95 J	6.42 U	5.50 J	2.57 U	2.49 J	1.88 J	2.37 J	5.16 J
					MRS03-APN31038002L-SS002	0	µg/kg	1.95 U	1.04 U	4.22 U	1.89 J	2.09 J	3.62 J	6.49 U	4.22 U	2.95 J	6.49 U	4.31 J	2.60 U	6.49 U	1.82 J	2.92 J	3.80 J
					MRS03-APN31038002L-SS003	0	µg/kg	1.97 J	1.91 J	2.75 J	22.1	27.4	32.7	16.8	13.8	30.9	4.23 J	37.0	2.57 U	19.1	8.10 J	18.5	41.7
				10/6/2020	MRS03-APN31038002L-SS1001	1	µg/kg	1.97 UJ	1.05 UJ	4.28 UJ	4.28 UJ	4.28 UJ	6.58 UJ	6.58 UJ	4.28 UJ	4.28 UJ	6.58 UJ	4.28 UJ	2.63 UJ	6.58 UJ	1.97 UJ	6.58 UJ	6.58 UJ
					MRS03-APN31038002L-SS1002	1	µg/kg	1.97 UJ	1.05 UJ	4.26 UJ	4.26 UJ	4.26 UJ	6.56 UJ	6.56 UJ	4.26 UJ	4.26 UJ	6.56 UJ	4.26 UJ	2.62 UJ	6.56 UJ	1.97 UJ	6.56 UJ	6.56 UJ
					MRS03-APN31038002L-SS1003	1	µg/kg	1.82 U	0.973 U	3.95 U	3.95 U	3.95 U	6.08 U	6.08 U	3.95 U	3.95 U	6.08 U	3.95 U	2.43 U	6.08 U	1.82 U	6.08 U	6.08 U
					MRS03-APN31038002L-SS2001	2	µg/kg	1.97 U	1.05 U	4.26 U	4.26 U	4.26 U	6.56 U	6.56 U	4.26 U	4.26 U	6.56 U	4.26 U	2.62 U	6.56 U	1.97 U	6.56 U	6.56 U
					MRS03-APN31038002L-SS2002	2	µg/kg	1.97 UJ	1.05 UJ	4.26 UJ	4.26 UJ	4.26 UJ	6.55 UJ	6.55 UJ	4.26 UJ	4.26 UJ	6.55 UJ	4.26 UJ	2.62 UJ	6.55 UJ	1.97 UJ	6.55 UJ	6.55 UJ
					MRS03-APN31038002L-SS2003	2	µg/kg	2.00 U	1.07 U	4.33 U	4.33 U	4.33 U	6.66 U	6.66 U	4.33 U	4.33 U	6.66 U	4.33 U	2.66 U	6.66 U	2.00 U	6.66 U	6.66 U
3	31038002M	--	E Thompson Ave	10/1/2020	MRS03-APN31038002M-SS001	0	µg/kg	0.778 J	0.997 U	4.05 U	4.05 U	2.96 J	3.46 J	6.23 U	4.05 U	2.61 J	6.23 U	3.94 J	2.49 U	2.12 J	1.78 J	6.23 U	3.46 J
					MRS03-APN31038002M-SS002	0	µg/kg	1.91 UJ	1.02 UJ	4.13 UJ	4.13 UJ	2.79 J	3.06 J	6.36 UJ	4.13 UJ	2.45 J	6.36 UJ	3.16 J	2.54 UJ	6.36 UJ	1.07 J	6.36 UJ	2.98 J
					MRS03-APN31038002M-SS003	0	µg/kg	1.93 U	1.03 U	4.19 U	2.01 J	3.67 J	4.06 J	6.45 U	4.19 U	3.00 J	6.45 U	4.62 J	2.58 U	2.53 J	1.80 J	2.21 J	4.23 J
					MRS03-APN31038002M-SS1001	1	µg/kg	1.88 U	1.01 U	4.08 U	4.08 U	1.76 J	6.28 U	6.28 U	4.08 U	4.08 U	6.28 U	2.38 J	2.51 U	6.28 U	1.11 J	6.28 U	2.09 J
					MRS03-APN31038002M-SS1002	1	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	1.75 J	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	2.31 J	2.63 U	6.57 U	1.97 U	6.57 U	2.20 J
				10/2/2020	MRS03-APN31038002M-SS1003	1	µg/kg	1.83 U	0.975 U	3.96 U	3.96 U	1.45 J	6.09 U	6.09 U	3.96 U	3.96 U	6.09 U	3.96 U	2.44 U	6.09 U	0.931 J	6.09 U	6.09 U
				10/1/2020	MRS03-APN31038002M-SS2001	2	µg/kg	0.580 J	0.387 J	4.06 U	4.06 U	4.06 U	6.25 U	6.25 U	4.06 U	4.06 U	6.25 U	4.06 U	2.50 U	6.25 U	1.32 J	6.25 U	6.25 U
					MRS03-APN31038002M-SS2002	2	µg/kg	1.93 U	1.03 U	4.19 U	10.6	8.18 J	21.9	5.45 J	7.98 J	21.6	6.44 U	10.9	2.58 U	8.22 J	1.93 U	6.44 U	10.3
				10/2/2020	MRS03-APN31038002M-SS2003	2	µg/kg	1.97 UJ	1.05 UJ	4.27 UJ	4.27 UJ	4.27 UJ	6.57 UJ	6.57 UJ	4.27 UJ	4.27 UJ	6.57 UJ	4.27 UJ	2.63 UJ	6.57 UJ	0.765 J	6.57 UJ	6.57 UJ

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
3	31038002N	--	E Thompson Ave	10/8/2020	MRS03-APN31038002N-SS001	0	µg/kg	0.978 J	0.713 J	3.86 U	5.37 J	6.54 J	9.85	4.83 J	4.82 J	6.81 J	5.94 U	11.6	2.38 U	6.01 J	2.41 J	7.17 J	9.79
					MRS03-APN31038002N-SS002	0	µg/kg	1.63 J	11.2 J	21.7 J	45.9 J	44.2 J	55.2 J	22.6 J	24.7 J	42.2 J	6.76 J	104 J	10.4 J	29.5 J	2.81 J	99.7 J	87.0 J
					MRS03-APN31038002N-SS003	0	µg/kg	1.01 J	1.03 U	4.19 U	3.33 J	4.19 U	6.65 J	3.35 J	2.99 J	4.78 J	6.44 U	6.89 J	2.58 U	4.04 J	2.74 J	3.18 J	5.92 J
					MRS03-APN31038002N-SS1001	1	µg/kg	1.95 U	1.04 U	4.23 U	4.23 U	4.23 U	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	4.07 J	2.61 U	6.51 U	1.95 U	4.76 J	2.90 J
					MRS03-APN31038002N-SS1002	1	µg/kg	1.99 U	1.06 U	4.31 U	4.31 U	1.57 J	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	1.99 U	6.63 U	6.63 U
					MRS03-APN31038002N-SS1003	1	µg/kg	1.83 U	0.975 U	3.96 U	3.96 U	3.96 U	6.09 U	6.09 U	3.96 U	3.96 U	6.09 U	2.00 J	2.44 U	6.09 U	1.83 U	6.09 U	6.09 U
					MRS03-APN31038002N-SS2001	2	µg/kg	1.97 U	1.05 U	4.28 U	4.28 U	4.28 U	6.58 U	6.58 U	4.28 U	4.28 U	6.58 U	4.28 U	2.63 U	6.58 U	0.960 J	6.58 U	6.58 U
					MRS03-APN31038002N-SS2002	2	µg/kg	1.98 U	1.06 U	4.30 U	4.30 U	4.30 U	6.61 U	6.61 U	4.30 U	4.30 U	6.61 U	4.30 U	2.65 U	6.61 U	1.98 U	6.61 U	6.61 U
					MRS03-APN31038002N-SS2003	2	µg/kg	2.00 U	1.07 U	4.33 U	4.33 U	4.33 U	6.66 U	6.66 U	4.33 U	4.33 U	6.66 U	4.33 U	2.66 U	6.66 U	2.00 U	6.66 U	6.66 U
3	31038002O	--	E Thompson Ave	10/6/2020	MRS03-APN31038002O-SS001	0	µg/kg	1.07 J	1.02 UJ	4.13 UJ	3.03 J	3.46 J	6.23 J	3.33 J	2.27 J	4.73 J	6.36 UJ	6.59 J	2.54 UJ	3.38 J	2.70 J	3.72 J	5.74 J
					MRS03-APN31038002O-SS002	0	µg/kg	1.03 J	1.06 UJ	4.30 UJ	4.79 J	5.01 J	8.27 J	6.61 UJ	2.94 J	6.32 J	6.61 UJ	10.5 J	2.65 UJ	4.22 J	2.94 J	5.53 J	8.98 J
					MRS03-APN31038002O-SS003	0	µg/kg	0.844 J	1.05 U	4.25 U	3.18 J	3.74 J	5.92 J	3.05 J	2.17 J	4.71 J	6.54 U	6.41 J	2.62 U	3.10 J	2.78 J	2.77 J	6.11 J
					MRS03-APN31038002O-SS1001	1	µg/kg	1.96 U	1.05 U	4.25 U	2.58 J	2.34 J	3.86 J	6.54 U	4.25 U	2.77 J	6.54 U	5.15 J	2.62 U	6.54 U	0.743 J	2.48 J	4.41 J
					MRS03-APN31038002O-SS1002	1	µg/kg	1.98 U	1.06 U	4.29 U	4.29 U	4.29 U	6.61 U	6.61 U	4.29 U	4.29 U	6.61 U	4.29 U	2.64 U	6.61 U	0.856 J	6.61 U	6.61 U
				10/7/2020	MRS03-APN31038002O-SS1003	1	µg/kg	2.00 U	1.07 U	4.33 U	4.33 U	4.33 U	6.66 U	6.66 U	4.33 U	4.33 U	6.66 U	4.33 U	2.67 U	6.66 U	0.737 J	6.66 U	6.66 U
				10/6/2020	MRS03-APN31038002O-SS2001	2	µg/kg	1.95 U	1.04 U	4.23 U	4.23 U	4.23 U	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	4.23 U	2.61 U	6.51 U	1.95 U	6.51 U	6.51 U
					MRS03-APN31038002O-SS2002	2	µg/kg	1.92 U	1.02 U	4.16 U	4.16 U	4.16 U	6.39 U	6.39 U	4.16 U	4.16 U	6.39 U	4.16 U	2.56 U	6.39 U	1.92 U	6.39 U	6.39 U
				10/7/2020	MRS03-APN31038002O-SS2003	2	µg/kg	1.94 U	1.03 U	4.19 U	4.19 U	4.19 U	6.45 U	6.45 U	4.19 U	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	1.94 U	6.45 U	6.45 U
3	31038002P	--	E Thompson Ave	9/30/2020	MRS03-APN31038002P-SS003	0	µg/kg	0.770 J	1.04 U	4.23 U	2.51 J	2.63 J	4.67 J	2.17 J	4.23 U	3.91 J	6.51 U	6.86 J	2.60 U	2.65 J	1.70 J	3.53 J	6.04 J
				10/12/2020	MRS03-APN31038002P-SS001R	0	µg/kg	0.866 J	1.05 U	4.25 U	4.25 U	1.78 J	3.37 J	6.53 U	4.25 U	2.66 J	6.53 U	4.08 J	2.61 U	6.53 U	1.67 J	2.22 J	3.68 J
					MRS03-APN31038002P-SS002R	0	µg/kg	1.94 U	1.04 U	4.21 U	4.21 U	3.23 J	3.83 J	6.47 U	4.21 U	2.96 J	6.47 U	3.85 J	2.59 U	2.22 J	1.99 J	6.47 U	3.55 J
				9/30/2020	MRS03-APN31038002P-SS1001	1	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	1.67 J	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	2.74 J	2.63 U	6.57 U	1.57 J	3.51 J	6.57 U
					MRS03-APN31038002P-SS1002	1	µg/kg	1.99 U	1.06 U	4.31 U	4.31 U	1.63 J	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	2.11 J	2.65 U	6.63 U	1.59 J	6.63 U	6.63 U
				10/1/2020	MRS03-APN31038002P-SS1003	1	µg/kg	1.92 U	1.03 U	4.16 U	4.16 U	1.92 J	2.35 J	6.41 U	4.16 U	4.16 U	6.41 U	2.32 J	2.56 U	6.41 U	1.27 J	6.41 U	2.14 J
				9/30/2020	MRS03-APN31038002P-SS2001	2	µg/kg	1.97 U	1.05 U	4.26 U	4.26 U	4.26 U	6.56 U	6.56 U	4.26 U	4.26 U	6.56 U	4.26 U	2.62 U	6.56 U	1.97 U	6.56 U	6.56 U
					MRS03-APN31038002P-SS2002	2	µg/kg	1.95 U	1.04 U	4.22 U	4.22 U	4.22 U	6.49 U	6.49 U	4.22 U	4.22 U	6.49 U	4.22 U	2.60 U	6.49 U	1.95 U	6.49 U	6.49 U
				10/1/2020	MRS03-APN31038002P-SS2003	2	µg/kg	1.89 U	1.01 U	4.09 U	4.09 U	4.09 U	6.30 U	6.30 U	4.09 U	4.09 U	6.30 U	4.09 U	2.52 U	6.30 U	1.89 U	6.30 U	6.30 U
3	31038002Q	--	E Thompson Ave	10/21/2020	MRS03-APN31038002Q-SS001	0	µg/kg	1.10 J	1.06 U	4.29 U	3.30 J	3.61 J	6.61 J	4.67 J	2.16 J	5.23 J	6.60 U	7.86 J	2.64 U	3.02	2.71 J	3.80 J	6.70 J
					MRS03-APN31038002Q-SS002	0	µg/kg	1.94 U	1.04 U	4.20 U	4.70 J	5.21 J	8.85 J	5.31 J	3.07 J	6.83 J	6.47 U	4.20 U	2.59 U	4.46	1.94 U	4.61 J	8.82 J
					MRS03-APN31038002Q-SS003	0	µg/kg	1.25 J	1.05 U	4.26 U	2.38 J	2.92 J	5.28 J	3.85 J	4.26 U	4.56 J	6.56 U	5.59 J	2.63 U	6.56 U	3.10 J	2.73 J	5.06 J
					MRS03-APN31038002Q-SS1001	1	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.97 U	6.57 U	6.57 U
					MRS03-APN31038002Q-SS1002	1	µg/kg	1.85 U	0.987 U	4.01 U	4.01 U	4.01 U	6.17 U	6.17 U	4.01 U	4.01 U	6.17 U	4.01 U	2.47 U	6.17 U	1.85 U	6.17 U	6.17 U
				10/22/2020	MRS03-APN31038002Q-SS1003	1	µg/kg	1.94 U	1.04 U	4.21 U	4.21 U	4.21 U	6.47 U	6.47 U	4.21 U	4.21 U	6.47 U	4.21 U	2.59 U	6.47 U	1.94 U	6.47 U	6.47 U
				10/21/2020	MRS03-APN31038002Q-SS2001	2	µg/kg	1.94 U	1.03 U	4.19 U	4.19 U	4.19 U	6.45 U	6.45 U	4.19 U	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	1.94 U	6.45 U	6.45 U
					MRS03-APN31038002Q-SS2002	2	µg/kg	1.97 U	1.05 U	4.26 U	4.26 U	4.26 U	6.56 U	6.56 U	4.26 U	2.46 J	6.56 U	4.26 U	2.62 U	6.56 U	1.34 J	2.28 J	6.56 U
				10/22/2020	MRS03-APN31038002Q-SS2003	2	µg/kg	1.96 U	1.04 U	4.24 U	4.24 U	4.24 U	6.52 U	6.52 U	4.24 U	4.24 U	6.52 U	4.24 U	2.61 U	6.52 U	1.96 U	6.52 U	6.52 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
4	31040005A	--	E Thompson Ave	10/22/2020	MRS03-APN31040005A-SS001	0	µg/kg	1.89 UJ	1.01 UJ	4.09 UJ	1.92 J	2.27 J	4.65 J	6.30 UJ	4.09 UJ	3.57 J	6.30 UJ	5.27 J	2.52 UJ	6.30 UJ	2.54 J	2.23 J	4.50 J
					MRS03-APN31040005A-SS002	0	µg/kg	1.94 UJ	1.04 UJ	4.20 UJ	2.73 J	3.22 J	5.61 J	2.70 J	4.20 UJ	4.57 J	6.47 UJ	6.77 J	2.59 UJ	2.81 J	2.40 J	3.11 J	5.97 J
					MRS03-APN31040005A-SS003	0	µg/kg	1.77 UJ	0.942 UJ	3.83 UJ	2.61 J	3.22 J	5.88 J	2.87 J	1.89 J	4.45 J	5.89 U	6.18 J	2.35 U	2.90 J	2.29 J	2.46 J	5.80 J
					MRS03-APN31040005A-SS1001	1	µg/kg	1.93 UJ	1.03 UJ	4.19 UJ	4.19 UJ	4.19 UJ	6.45 UJ	6.45 UJ	4.19 UJ	4.19 UJ	6.45 UJ	4.19 UJ	2.58 UJ	6.45 UJ	0.764 J	6.45 UJ	6.45 UJ
					MRS03-APN31040005A-SS1002	1	µg/kg	1.84 UJ	0.982 UJ	3.99 UJ	3.99 UJ	3.99 UJ	6.14 UJ	6.14 UJ	3.99 UJ	3.99 UJ	6.14 UJ	3.99 UJ	2.45 UJ	6.14 UJ	1.84 UJ	6.14 UJ	6.14 UJ
					MRS03-APN31040005A-SS1003	1	µg/kg	1.98 U	1.05 U	4.28 U	4.28 U	4.28 U	6.59 U	6.59 U	4.28 U	4.28 U	6.59 U	4.28 U	2.64 U	6.59 U	1.98 U	6.59 U	6.59 U
					MRS03-APN31040005A-SS2001	2	µg/kg	1.92 U	1.02 U	4.16 U	4.16 U	4.16 U	6.39 U	6.39 U	4.16 U	4.16 U	6.39 U	4.16 U	2.56 U	6.39 U	1.53 J	6.39 U	6.39 U
					MRS03-APN31040005A-SS2002	2	µg/kg	1.86 UJ	0.994 UJ	4.04 UJ	4.04 UJ	4.04 UJ	6.21 UJ	6.21 UJ	4.04 UJ	4.04 UJ	6.21 UJ	4.04 UJ	2.48 UJ	6.21 UJ	1.86 UJ	6.21 UJ	6.21 UJ
					MRS03-APN31040005A-SS2003	2	µg/kg	1.83 U	0.978 U	3.97 U	3.97 U	3.97 U	6.11 U	6.11 U	3.97 U	3.97 U	6.11 U	3.97 U	2.45 U	6.11 U	1.83 U	6.11 U	6.11 U
4	31040005B	--	E Thompson Ave	10/22/2020	MRS03-APN31040005B-SS001	0	µg/kg	0.683 J	1.01 U	4.10 U	1.80 J	4.10 U	4.34 J	6.30 U	4.10 U	3.43 J	6.30 U	4.80 J	2.52 U	6.30 U	2.01 J	6.30 U	4.40 J
					MRS03-APN31040005B-SS002	0	µg/kg	0.854 J	0.960 U	3.90 U	2.13 J	3.90 U	4.76 J	2.22 J	3.90 U	3.61 J	6.00 U	5.86 J	2.40 U	2.26 J	2.34 J	3.20 J	5.28 J
					MRS03-APN31040005B-SS003	0	µg/kg	0.706 J	1.03 U	4.19 U	1.96 J	4.19 U	4.50 J	6.45 U	4.19 U	3.49 J	6.45 U	5.73 J	2.58 U	2.39 J	2.00 J	2.77 J	5.10 J
					MRS03-APN31040005B-SS1001	1	µg/kg	1.80 U	0.958 U	3.89 U	3.89 U	5.99 U	5.99 U	5.99 U	3.89 U	3.89 U	5.99 U	3.89 U	2.4 U	5.99 U	0.957 J	5.99 U	5.99 U
					MRS03-APN31040005B-SS1002	1	µg/kg	0.691 J	1.05 U	4.25 U	4.25 U	4.25 U	6.53 U	6.53 U	4.25 U	4.25 U	6.53 U	2.02 J	2.61 U	6.53 U	1.51 J	6.53 U	6.53 U
				10/23/2020	MRS03-APN31040005B-SS1003	1	µg/kg	1.96 U	1.09 U	4.24 U	4.24 U	4.24 U	6.52 U	6.52 U	4.24 U	4.24 U	6.52 U	4.24 U	2.61 U	6.52 U	1.05 J	6.52 U	6.52 U
				10/22/2020	MRS03-APN31040005B-SS2001	2	µg/kg	0.625 J	1.07 U	4.33 U	4.33 U	4.33 U	6.67 U	6.67 U	4.43 U	4.43 U	6.67 U	4.43 U	2.67 U	6.67 U	1.20 J	6.67 U	6.67 U
					MRS03-APN31040005B-SS2002	2	µg/kg	1.78 UJ	0.952 UJ	3.87 UJ	3.87 UJ	3.87 UJ	5.95 UJ	5.95 UJ	3.87 UJ	3.87 UJ	5.95 UJ	3.87 UJ	2.38 UJ	5.95 UJ	1.78 UJ	5.95 UJ	5.95 UJ
				10/23/2020	MRS03-APN31040005B-SS2003	2	µg/kg	1.95 U	1.04 U	4.21 U	4.21 U	4.21 U	6.49 U	6.49 U	4.21 U	4.21 U	6.49 U	4.21 U	2.59 U	6.49 U	1.95 U	6.49 U	6.49 U
4	31040005C	--	E Thompson Ave	10/27/2020	MRS03-APN31040005C-SS001	0	µg/kg	2.00 U	1.06 U	4.32 U	2.97 J	3.01 J	6.19 J	2.98 J	2.33 J	5.06 J	6.65 U	4.32 U	2.66 U	3.09 J	2.00 U	6.65 U	5.93 J
					MRS03-APN31040005C-SS002	0	µg/kg	1.97 U	1.05 U	4.28 U	2.36 J	2.61 J	5.12 J	6.58 U	2.44 J	4.24 J	6.58 U	6.38 J	2.63 U	2.61 J	1.51 J	3.46 J	5.40 J
					MRS03-APN31040005C-SS003	0	µg/kg	2.00 U	1.07 U	4.33 U	2.12 J	2.52 J	5.15 J	2.45 J	4.33 U	3.87 J	6.66 U	5.13 J	2.66 U	2.58 J	1.25 J	6.66 U	4.65 J
					MRS03-APN31040005C-SS1001	1	µg/kg	1.97 U	1.05 U	4.26 U	4.26 U	4.26 U	6.56 U	6.56 U	4.26 U	4.26 U	6.56 U	4.26 U	2.63 U	6.56 U	0.806 J	6.56 U	6.56 U
					MRS03-APN31040005C-SS1002	1	µg/kg	1.90 U	1.01 U	4.11 U	4.11 U	4.11 U	6.33 U	6.33 U	4.11 U	4.11 U	6.33 U	4.11 U	2.53 U	6.33 U	1.90 U	6.33 U	6.33 U
					MRS03-APN31040005C-SS1003	1	µg/kg	1.94 U	1.03 U	4.20 U	4.20 U	4.20 U	6.46 U	6.46 U	4.20 U	4.20 U	6.46 U	1.99 J	2.59 U	6.46 U	0.95 J	6.46 U	6.46 U
					MRS03-APN31040005C-SS2001	2	µg/kg	1.99 U	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	0.736 J	6.63 U	6.63 U
					MRS03-APN31040005C-SS2002	2	µg/kg	1.99 U	1.06 U	4.30 U	4.30 U	4.30 U	6.62 U	6.62 U	4.30 U	4.30 U	6.62 U	4.30 U	2.65 U	6.62 U	1.99 U	6.62 U	6.62 U
					MRS03-APN31040005C-SS2003	2	µg/kg	1.92 U	1.02 U	4.16 U	4.16 U	4.16 U	6.40 U	6.40 U	4.16 U	4.16 U	6.40 U	4.16 U	2.56 U	6.40 U	0.812 J	6.40 U	6.40 U
4	31040005D	--	E Thompson Ave	10/27/2020	MRS03-APN31040005D-SS001	0	µg/kg	0.972 J	1.03 U	4.19 U	2.02 J	2.33 J	4.28 J	2.17 J	4.19 U	3.60 J	6.45 U	4.65 J	2.58 U	2.24 J	1.58 J	6.45 U	4.07 J
					MRS03-APN31040005D-SS002	0	µg/kg	1.02 J	1.05 U	4.26 U	2.62 J	3.36 J	5.84 J	3.10 J	2.11 J	4.58 J	6.55 U	5.54 J	2.62 U	3.11 J	1.59 J	2.49 J	5.23 J
					MRS03-APN31040005D-SS003	0	µg/kg	1.88 UJ	1.00 UJ	4.08 UJ	1.75 J	2.22 J	3.87 J	2.13 J	4.08 UJ	3.30 J	6.28 UJ	3.91 J	2.51 UJ	6.28 UJ	1.50 J	6.28 UJ	3.52 J
					MRS03-APN31040005D-SS1001	1	µg/kg	1.93 U	1.03 U	4.18 U	4.18 U	4.18 U	6.43 U	6.43 U	4.18 U	4.18 U	6.43 U	4.18 U	2.57 U	6.43 U	0.822 J	6.43 U	6.43 U
				10/28/2020	MRS03-APN31040005D-SS1002	1	µg/kg	1.89 UJ	1.01 UJ	4.10 UJ	4.1 UJ	4.10 UJ	6.31 UJ	6.31 UJ	4.10 UJ	1.96 J	6.31 UJ	3.37 J	2.52 UJ	6.31 UJ	1.89 J	2.48 J	2.67 J
					MRS03-APN31040005D-SS1003	1	µg/kg	1.92 U	1.02 U	4.15 U	4.15 U	4.15 U	6.39 U	6.39 U	4.15 U	4.15 U	6.39 U	4.15 U	2.55 U	6.39 U	0.897 J	6.39 U	6.39 U
				10/27/2020	MRS03-APN31040005D-SS2001	2	µg/kg	1.89 UJ	1.01 UJ	4.10 UJ	4.10 UJ	4.10 UJ	6.30 UJ	6.30 UJ	4.10 UJ	4.10 UJ	6.30 UJ	4.10 UJ	2.52 UJ	6.30 UJ	1.89 UJ	6.30 UJ	6.30 UJ
				10/28/2020	MRS03-APN31040005D-SS2002	2	µg/kg	1.90 UJ	1.01 UJ	4.11 UJ	4.11 UJ	4.11 UJ	6.32 UJ	6.32 UJ	4.11 UJ	4.11 UJ	6.32 UJ	4.11 UJ	2.53 UJ	6.32 UJ	1.90 UJ	6.32 UJ	6.32 UJ
					MRS03-APN31040005D-SS2003	2	µg/kg	1.93 UJ	1.03 UJ	4.19 UJ	4.19 UJ	4.19 UJ	6.44 UJ	6.44 UJ	4.19 UJ	4.19 UJ	6.44 UJ	4.19 UJ	2.58 UJ	6.44 UJ	0.636 J	6.44 UJ	6.44 UJ

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
4	31040005E	--	E Thompson Ave	10/28/2020	MRS03-APN31040005E-SS001	0	µg/kg	1.27 J	0.391 J	4.29 U	3.81 J	5.44 J	7.65 J	3.85 J	2.96 J	5.52 J	6.60 U	9.08 J	2.64 U	4.46 J	2.36 J	4.37 J	7.76 J
					MRS03-APN31040005E-SS002	0	µg/kg	1.12 J	0.956 U	3.88 U	2.42 J	3.98 J	5.34 J	2.51 J	2.10 J	3.99 J	5.97 U	6.00 J	2.39 U	2.96 J	2.14 J	2.54 J	5.38 J
					MRS03-APN31040005E-SS003	0	µg/kg	1.45 J	1.03 U	4.20 U	1.94 J	4.20 U	4.79 J	2.55 J	4.20 U	3.37 J	6.46 U	4.55 J	2.59 U	2.59 J	2.72 J	2.43 J	4.20 J
					MRS03-APN31040005E-SS1001	1	µg/kg	1.25 J	1.06 U	4.29 U	4.29 U	4.29 U	6.61 U	6.61 U	4.29 U	4.29 U	6.61 U	4.29 U	2.64 U	6.61 U	2.06 J	6.61 U	6.61 U
					MRS03-APN31040005E-SS1002	1	µg/kg	1.59 J	1.03 U	4.19 U	4.19 U	4.19 U	6.45 U	6.45 U	4.19 U	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	2.35 J	6.45 U	6.45 U
					MRS03-APN31040005E-SS1003	1	µg/kg	1.18 J	1.02 U	4.13 U	4.13 U	4.13 U	6.36 U	6.36 U	4.13 U	4.13 U	6.36 U	4.13 U	2.54 U	6.36 U	1.99 J	6.36 U	6.36 U
					MRS03-APN31040005E-SS2001	2	µg/kg	1.27 J	1.06 U	4.30 U	4.30 U	4.30 U	6.62 U	6.62 U	4.30 U	4.30 U	6.62 U	2.72 J	2.65 U	6.65 U	2.48 J	7.08 J	6.62 U
					MRS03-APN31040005E-SS2002	2	µg/kg	0.793 J	1.02 U	4.16 U	4.16 U	4.16 U	6.40 U	6.40 U	4.16 U	4.16 U	6.40 U	4.16 U	2.56 U	6.40 U	1.37 J	6.40 U	6.40 U
					MRS03-APN31040005E-SS2003	2	µg/kg	1.10 J	1.05 U	4.26 U	4.26 U	4.26 U	6.55 U	6.55 U	4.26 U	4.26 U	6.55 U	4.26 U	2.62 U	6.55 U	1.80 J	6.55 U	6.55 U
4	31040005F	--	E Thompson Ave	10/29/2020	MRS03-APN31040005F-SS001	0	µg/kg	1.24 J	1.05 U	4.25 U	4.05 J	5.78 J	8.53 J	3.91 J	3.18 J	5.85 J	6.53 U	9.71 J	2.61 U	4.76 J	2.37 J	4.40 J	8.64 J
					MRS03-APN31040005F-SS002	0	µg/kg	0.969 J	0.975 UJ	3.96 UJ	2.42 J	3.81 J	5.64 J	2.56 J	2.08 J	4.11 J	6.09 UJ	6.27 J	2.44 UJ	2.98 J	1.60 J	2.53 J	5.78 J
					MRS03-APN31040005F-SS003	0	µg/kg	1.15 J	1.03 U	4.17 U	2.15 J	3.66 J	5.29 J	2.55 J	4.17 U	3.66 J	6.41 U	5.73 J	2.56 U	2.92 J	2.09 J	2.46 J	5.16 J
					MRS03-APN31040005F-SS1001	1	µg/kg	0.921 J	1.05 U	4.25 U	4.25 U	4.25 U	6.53 U	6.53 U	4.25 U	4.25 U	6.53 U	4.25 U	2.61 U	6.53 U	1.88 J	6.53 U	6.53 U
					MRS03-APN31040005F-SS1002	1	µg/kg	0.746 J	1.07 U	4.33 U	4.33 U	4.33 U	6.66 U	6.66 U	4.33 U	4.33 U	6.66 U	2.37 J	2.66 U	6.66 U	1.46 J	6.66 U	6.66 U
					MRS03-APN31040005F-SS1003	1	µg/kg	0.810 J	1.05 UJ	4.27 UJ	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.58 J	6.57 U	6.57 U
					MRS03-APN31040005F-SS2001	2	µg/kg	1.12 J	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	1.92 J	6.63 U	6.63 U
					MRS03-APN31040005F-SS2002	2	µg/kg	0.827 J	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.50 J	6.57 U	6.57 U
					MRS03-APN31040005F-SS2003	2	µg/kg	1.75 J	1.06 U	4.32 U	4.32 U	4.32 U	6.64 U	6.64 U	4.32 U	4.32 U	6.64 U	4.32 U	2.66 U	6.64 U	4.01 J	6.64 U	6.64 U
4	31040005G	--	E Thompson Ave	10/29/2020	MRS03-APN31040005G-SS001	0	µg/kg	0.997 J	1.02 UJ	4.15 UJ	4.12 J	4.22 J	8.09 J	3.66 J	2.93 J	6.37 J	6.39 UJ	9.16 J	2.56 UJ	3.74 J	1.79 J	3.23 J	8.27 J
					MRS03-APN31040005G-SS002	0	µg/kg	1.90 UJ	1.01 UJ	4.11 UJ	6.22 J	5.81 J	10.5 J	4.37 J	3.91 J	8.22 J	6.33 UJ	14.3 J	2.53 UJ	4.63 U	1.15 J	5.17 J	12.6 J
					MRS03-APN31040005G-SS003	0	µg/kg	1.17 J	1.06 UJ	4.32 UJ	3.69 J	3.93 J	7.60 J	3.70 J	2.57 J	5.56 J	6.65 UJ	8.44 J	2.66 UJ	3.56 J	1.91 J	3.25 J	7.59 J
					MRS03-APN31040005G-SS1001	1	µg/kg	1.02 J	0.994 U	1.57 J	13.3	9.38	15.2	6.22 J	5.62 J	11.5	6.21 U	3.06	2.48 U	7.06 J	1.71 J	13	25.4
					MRS03-APN31040005G-SS1002	1	µg/kg	0.871 J	1.03 U	4.19 U	2.63 J	2.80 J	5.17 J	2.58 J	2.10 J	3.85 J	6.44 U	5.27 J	2.58 U	2.68 J	1.86 J	6.44 U	4.94 J
				10/30/2020	MRS03-APN31040005G-SS1003	1	µg/kg	0.887 J	1.05 U	4.25 U	3.70 J	3.53 J	5.35 J	2.35 J	2.25 J	4.79 J	6.53 UJ	6.01 J	2.61 UJ	2.64 J	1.52 J	2.32 J	6.31 J
				10/29/2020	MRS03-APN31040005G-SS2001	2	µg/kg	1.98 U	1.06 U	4.29 U	4.29 U	4.29 U	6.61 U	6.61 U	4.29 U	4.29 U	6.61 U	4.29 U	2.64 U	6.61 U	1.98 U	6.61 U	6.61 U
					MRS03-APN31040005G-SS2002	2	µg/kg	1.99 U	1.06 U	4.32 U	4.32 U	4.32 U	6.64 U	6.64 U	4.32 U	4.32 U	6.64 U	4.32 U	2.66 U	6.64 U	1.98 U	6.64 U	6.64 U
				10/30/2020	MRS03-APN31040005G-SS2003	2	µg/kg	0.982 J	1.05 U	4.28 U	4.28 U	4.28 U	6.58 U	6.58 U	4.28 U	4.28 U	6.58 U	4.28 U	2.63 U	6.58 U	1.71 J	6.58 U	6.58 U
4	31040005H	--	E Thompson Ave	11/3/2020	MRS03-APN31040005H-SS001	0	µg/kg	0.936 J	0.528 J	4.32 U	5.33 J	8.03 J	9.53 J	4.58 J	4.36 J	8.45 J	6.65 U	12.2	2.66 U	5.39 J	2.16 J	5.91 J	12
					MRS03-APN31040005H-SS002	0	µg/kg	1.00 J	1.06 U	4.30 U	3.64 J	6.30 J	7.09 J	3.46 J	3.11 J	5.93 J	6.62 U	8.99 J	2.65 U	4.00 J	3.14 J	4.22 J	8.42 J
					MRS03-APN31040005H-SS003	0	µg/kg	0.758 J	0.893 J	1.64 J	6.00 J	7.48 J	9.59 J	4.28 J	4.46 J	7.72 J	6.63 U	15.6	2.65 U	4.88 J	1.56 J	9.62 J	13
					MRS03-APN31040005H-SS1001	1	µg/kg	1.87 U	0.999 U	4.06 U	4.06 U	4.06 U	2.65 J	6.24 U	4.06 U	2.73 J	6.24 U	3.97 J	2.50 U	6.24 U	1.87 U	6.24 U	2.65 J
					MRS03-APN31040005H-SS1002	1	µg/kg	1.80 U	0.962 U	3.91 U	3.91 U	3.91 U	6.01 U	6.01 U	3.91 U	3.91 U	6.01 U	2.23 J	2.40 U	6.01 U	1.01 J	6.01 U	6.01 U
					MRS03-APN31040005H-SS1003	1	µg/kg	1.93 U	0.323 J	4.17 U	2.44 J	2.72 J	3.58 J	6.42 U	4.17 U	2.85 J	6.42 U	6.14 J	2.57 U	6.42 U	0.701 J	3.20 J	5.06 J
					MRS03-APN31040005H-SS2001	2	µg/kg	1.94 U	1.04 U	4.21 U	4.21 U	4.21 U	6.48 U	6.48 U	4.21 U	4.21 U	6.48 U	4.21 U	2.59 U	6.48 U	1.94 U	6.48 U	6.48 U
					MRS03-APN31040005H-SS2002	2	µg/kg	2.33 J	3.21 J	2.04 J	4.27 U	4.27 U	3.63 J	6.57 U	4.27 U	11.4	6.57 U	87.8	16.4	6.57 U	4.39 J	127	16
					MRS03-APN31040005H-SS2003	2	µg/kg	1.41 J	1.04 UJ	4.24 UJ	2.43 J	2.46 J	2.93 J	2.63 J	2.69 J	2.34 J	6.52 UJ	4.24 UJ	2.61 UJ	2.91 J	1.67 J	6.52 UJ	6.52 UJ

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
4	31040005I	--	E Thompson Ave	11/3/2020	MRS03-APN31040005I-SS001	0	µg/kg	0.614 J	1.04 UJ	4.24 UJ	4.24 UJ	2.56 J	3.36 J	6.53 UJ	4.24 UJ	2.59 J	6.53 UJ	4.01 J	2.61 UJ	6.53 UJ	1.50 J	6.53 UJ	3.46 J
					MRS03-APN31040005I-SS002	0	µg/kg	0.720 J	0.618 J	1.53 J	9.71 J	10 J	14.3 J	5.95 J	6.03 J	14 J	6.29 UJ	21.3 J	2.51 UJ	7.03 J	1.67 J	10.1 J	18.3 J
					MRS03-APN31040005I-SS003	0	µg/kg	0.585 J	0.971 U	3.94 U	3.94 U	2.51 J	2.61 J	6.07 U	3.94 U	2.16 J	6.07 U	3.29 J	2.43 U	6.07 U	1.43 J	6.07 U	2.79 J
					MRS03-APN31040005I-SS1001	1	µg/kg	1.87 U	0.995 U	4.04 U	4.04 U	4.04 U	6.22 U	6.22 U	4.04 U	4.04 U	6.22 U	4.04 U	2.49 U	6.22 U	1.87 U	6.22 U	6.22 U
				11/4/2020	MRS03-APN31040005I-SS1002	1	µg/kg	1.98 U	1.06 U	4.28 U	4.28 U	4.28 U	6.59 U	6.59 U	4.28 U	4.28 U	6.59 U	4.28 U	2.64 U	6.59 U	1.98 U	6.59 U	6.59 U
					MRS03-APN31040005I-SS1003	1	µg/kg	1.86 U	0.995 U	4.04 U	4.04 U	4.04 U	6.22 U	6.22 U	4.04 U	4.04 U	6.22 U	4.04 U	2.49 U	6.22 U	7.16 J	6.22 U	6.22 U
				11/3/2020	MRS03-APN31040005I-SS2001	2	µg/kg	1.94 U	1.04 U	4.21 U	4.21 U	4.21 U	6.48 U	6.48 U	4.21 U	4.21 U	6.48 U	4.21 U	2.59 U	6.48 U	1.94 U	2.61 J	6.48 U
				11/4/2020	MRS03-APN31040005I-SS2002	2	µg/kg	1.89 U	1.01 U	4.10 U	4.10 U	4.10 U	6.31 U	6.31 U	4.10 U	4.10 U	6.31 U	4.10 U	2.53 U	6.31 U	1.89 U	6.31 U	6.31 U
					MRS03-APN31040005I-SS2003	2	µg/kg	1.86 U	0.992 U	4.03 U	4.03 U	4.03 U	6.20 U	6.20 U	4.03 U	4.03 U	6.20 U	4.03 U	2.48 U	6.20 U	0.651 J	6.20 U	6.20 U
4	31040005J	--	E Thompson Ave	11/4/2020	MRS03-APN31040005J-SS001	0	µg/kg	1.99 UJ	1.06 UJ	4.30 UJ	4.30 UJ	1.60 J	3.18 J	6.62 UJ	4.30 UJ	2.75 J	6.62 UJ	4.30 UJ	2.65 UJ	6.62 UJ	5.64 J	6.62 UJ	6.62 UJ
					MRS03-APN31040005J-SS002	0	µg/kg	1.99 UJ	1.06 UJ	4.32 UJ	1.81 J	1.75 J	3.42 J	6.64 UJ	4.32 UJ	2.82 J	6.64 UJ	3.98 J	2.66 UJ	6.64 UJ	0.950 J	6.64 UJ	3.62 J
					MRS03-APN31040005J-SS003	0	µg/kg	1.92 UJ	1.02 UJ	4.16 UJ	2.13 J	2.13 J	4.14 J	6.40 UJ	4.16 UJ	3.05 J	6.40 UJ	4.73 J	2.56 UJ	6.40 UJ	2.01 J	6.40 UJ	4.11 J
					MRS03-APN31040005J-SS1001	1	µg/kg	1.80 UJ	0.959 UJ	3.89 UJ	3.89 UJ	3.89 UJ	5.99 UJ	5.99 UJ	3.89 UJ	3.89 UJ	5.99 UJ	3.89 UJ	2.40 UJ	5.99 J	1.80 UJ	5.99 UJ	5.99 UJ
					MRS03-APN31040005J-SS1002	1	µg/kg	1.98 UJ	1.06 UJ	4.30 UJ	4.30 UJ	4.30 UJ	6.61 UJ	6.61 UJ	4.30 UJ	2.34 J	6.61 UJ	4.30 UJ	2.65 UJ	6.61 UJ	1.02 J	6.61 UJ	6.61 UJ
					MRS03-APN31040005J-SS1003	1	µg/kg	1.90 UJ	1.02 UJ	4.12 UJ	4.12 UJ	4.12 UJ	6.35 UJ	6.35 UJ	4.12 UJ	4.12 UJ	6.35 UJ	2.46 J	2.54 UJ	6.35 UJ	1.33 J	6.35 UJ	6.35 UJ
					MRS03-APN31040005J-SS2001	2	µg/kg	1.96 UJ	1.05 UJ	4.25 UJ	4.25 UJ	4.25 UJ	6.53 UJ	6.53 UJ	4.25 UJ	4.25 UJ	6.53 UJ	4.25 UJ	2.61 UJ	6.53 UJ	1.96 UJ	6.53 UJ	6.53 UJ
					MRS03-APN31040005J-SS2002	2	µg/kg	1.94 UJ	1.03 UJ	4.20 UJ	4.20 UJ	4.20 UJ	6.46 UJ	6.46 UJ	4.20 UJ	4.20 UJ	6.46 UJ	4.20 UJ	2.58 UJ	6.46 UJ	1.01 J	6.46 UJ	6.46 UJ
					MRS03-APN31040005J-SS2003	2	µg/kg	1.78 UJ	0.952 UJ	3.86 U	3.86 U	3.86 U	5.95 U	5.95 U	3.86 U	3.86 U	5.95 U	3.86 U	2.38 U	5.95 U	1.28 J	5.95 U	5.95 U
4	31040005K	--	E Thompson Ave	11/5/2020	MRS03-APN31040005K-SS001	0	µg/kg	1.94 UJ	1.04 UJ	4.21 UJ	1.87 J	4.21 UJ	4.01 J	6.47 UJ	4.21 J	3.31 J	6.47 UJ	4.21 UJ	2.59 UJ	6.47 UJ	2.64 J	6.47 UJ	3.38 J
					MRS03-APN31040005K-SS002	0	µg/kg	1.99 UJ	1.06 UJ	4.31 UJ	2.44 J	4.31 UJ	4.84 J	6.63 UJ	2.30 J	3.92 J	6.63 UJ	4.45 J	2.65 UJ	2.92 J	2.13 J	6.63 UJ	4.01 J
					MRS03-APN31040005K-SS003	0	µg/kg	1.94 U	1.03 UJ	4.20 U	420 U	4.20 U	6.46 U	6.46 U	4.20 U	4.20 U	6.46 U	4.20 U	2.58 U	6.46 U	1.94 U	6.46 U	6.46 U
					MRS03-APN31040005K-SS1001	1	µg/kg	1.94 UJ	1.03 UJ	4.20 UJ	4.20 UJ	4.20 UJ	6.46 UJ	6.46 UJ	4.20 UJ	4.20 UJ	6.46 UJ	4.20 UJ	2.58 UJ	6.46 UJ	1.94 UJ	6.46 UJ	6.46 UJ
					MRS03-APN31040005K-SS1002	1	µg/kg	1.36 J	1.02 UJ	4.16 UJ	4.16 UJ	4.16 UJ	6.40 UJ	6.40 UJ	4.16 UJ	4.16 UJ	6.40 UJ	4.16 UJ	2.56 UJ	6.40 UJ	9.57 J	6.40 UJ	6.40 UJ
					MRS03-APN31040005K-SS1003	1	µg/kg	45 J	10.4 J	15.2 J	1.68 J	4.00 UJ	6.15 UJ	6.15 UJ	4.00 UJ	4.88 J	6.15 UJ	4.34 J	10.5 J	6.15 UJ	780	46.6 J	4.51 J
					MRS03-APN31040005K-SS2001	2	µg/kg	1.96 UJ	1.05 UJ	4.26 UJ	4.26 UJ	4.26 UJ	6.55 UJ	6.55 UJ	4.26 UJ	4.26 UJ	6.55 UJ	4.26 UJ	2.62 UJ	6.55 UJ	1.96 UJ	6.55 UJ	6.55 UJ
					MRS03-APN31040005K-SS2002	2	µg/kg	1.94 U	1.04 UJ	4.21 U	4.21 U	4.21 U	6.48 U	6.48 U	4.21 U	4.21 U	6.48 U	4.21 U	2.59 U	6.48 U	1.05 J	6.48 U	6.48 U
					MRS03-APN31040005K-SS2003	2	µg/kg	1.96 U	1.05 UJ	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.61 U	6.54 U	1.96 U	6.54 U	6.54 U
4	31040005L	--	E Thompson Ave	11/5/2020	MRS03-APN31040005L-SS001	0	µg/kg	1.88 UJ	1.00 UJ	4.06 UJ	4.06 UJ	4.06 UJ	6.25 UJ	6.25 UJ	4.06 UJ	4.06 UJ	6.25 UJ	4.06 UJ	2.50 UJ	6.25 UJ	0.857 J	6.25 UJ	6.25 UJ
					MRS03-APN31040005L-SS002	0	µg/kg	1.96 UJ	1.04 UJ	4.24 UJ	4.24 UJ	4.24 UJ	6.52 UJ	6.52 UJ	4.24 UJ	2.18 J	6.52 UJ	4.56 J	2.61 UJ	6.52 UJ	0.931 J	2.23 J	4.02 J
					MRS03-APN31040005L-SS003	0	µg/kg	2.00 UJ	1.07 UJ	4.33 UJ	4.33 UJ	4.33 UJ	6.67 UJ	6.67 UJ	4.33 UJ	4.33 UJ	6.67 UJ	4.33 UJ	2.67 UJ	6.67 UJ	1.26 J	6.67 UJ	6.67 UJ
					MRS03-APN31040005L-SS1001	1	µg/kg	1.97 UJ	1.05 UJ	4.27 UJ	4.87 J	5.08 J	9.42 J	4.27 J	2.98 J	7.15 J	6.57 UJ	9.84 J	2.63 UJ	4.47 J	2.31 J	4.18 J	8.87 J
				11/6/2020	MRS03-APN31040005L-SS1003	1	µg/kg	1.79 UJ	0.953 UJ	3.87 UJ	5.13 J	5.70 J	9.52 J	4.11 J	3.25 J	7.67 J	5.96 UJ	10.9 J	2.38 UJ	4.26 J	1.66 J	4.49 J	10.3 J
					MRS03-APN31040005L-SS1002	1	µg/kg	0.800 J	0.946 UJ	3.84 UJ	3.27 J	3.40 J	7.30 J	2.85 J	2.19 J	4.97 J	5.91 UJ	7.14 J	2.36 UJ	2.92 J	2.46 J	2.83 J	6.53 J
				11/5/2020	MRS03-APN31040005L-SS2001	2	µg/kg	1.91 UJ	1.02 UJ	4.14 UJ	4.14 UJ	4.14 UJ	6.37 UJ	6.37 UJ	4.14 UJ	4.14 UJ	6.37 UJ	4.14 UJ	2.55 UJ	6.37 UJ	1.17 J	6.37 UJ	6.37 UJ
				11/6/2020	MRS03-APN31040005L-SS2003	2	µg/kg	1.79 UJ	0.957 UJ	3.89 UJ	3.65 J	2.64 J	3.91 J	3.44 J	3.59 J	3.58 J	3.17 J	2.88 J	2.39 UJ	3.88 J	1.04 J	5.98 UJ	2.85 J
					MRS03-APN31040005L-SS2002	2	µg/kg	1.86 UJ	0.993 UJ	4.03 UJ	4.03 UJ	4.03 UJ	6.20 UJ	6.20 UJ	4.03 UJ	4.03 UJ	6.20 UJ	4.03 UJ	2.48 UJ	6.20 J	0.818 J	6.20 UJ	6.20 UJ

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
4	31040005M	--	E Thompson Ave	11/18/2020	MRS03-APN31040005M-SS001	0	µg/kg	3.45 J	0.981 U	3.98 U	3.83 J	4.46 J	8.19 J	3.61 J	2.59 J	5.88 J	6.13 U	7.85 J	2.45 U	3.45 J	7.18 J	3.25 J	7.19 J
					MRS03-APN31040005M-SS002	0	µg/kg	2.54 J	1.01 UJ	4.10 UJ	3.47 J	4.09 J	7.30 J	3.48 J	2.47 J	5.47 J	6.31 UJ	8.27 J	2.53 UJ	3.54 J	5.15 J	3.26 J	7.41 J
					MRS03-APN31040005M-SS003	0	µg/kg	2.69 J	1.05 UJ	4.28 UJ	10.7 J	9.93 J	16.2 J	6.42 J	5.31 J	12.4 J	6.58 UJ	18.9 J	2.63 J	7.00 J	5.74 J	6.67 J	18.7 J
					MRS03-APN31040005M-SS1001	1	µg/kg	1.86 UJ	0.993 UJ	4.03 UJ	4.03 UJ	4.03 UJ	6.20 UJ	6.20 UJ	4.03 UJ	4.03 UJ	6.20 UJ	4.03 UJ	2.48 UJ	6.20 UJ	1.86 UJ	6.20 UJ	6.20 UJ
					MRS03-APN31040005M-SS1002	1	µg/kg	3.08 J	0.962 U	3.91 U	3.91 U	3.91 U	6.01 U	6.01 U	3.91 U	3.91 U	6.01 U	3.91 U	2.40 U	6.01 U	7.37 J	6.01 U	6.01 U
					MRS03-APN31040005M-SS1003	1	µg/kg	5.31 J	0.979 U	3.98 U	3.98 U	3.98 U	6.12 U	6.12 U	3.98 U	3.98 U	6.12 U	2.02 J	2.45 U	6.12 U	52.1	2.24 J	6.12 U
					MRS03-APN31040005M-SS2001	2	µg/kg	2.77 J	0.989 U	4.01 U	4.01 U	4.01 U	6.18 U	6.18 U	4.01U	4.01 U	6.18 U	4.01 U	2.47 U	6.18 U	6.40 J	6.18 U	6.18 U
					MRS03-APN31040005M-SS2002	2	µg/kg	3.03 J	1.04 U	4.21 U	4.21 U	4.21 U	6.48 U	6.48 U	4.21 U	4.21 U	6.48 U	4.21 U	2.59 U	6.48 U	7.24 J	6.48 U	6.48 U
					MRS03-APN31040005M-SS2003	2	µg/kg	2.54 J	1.03 UJ	4.17 UJ	4.17 UJ	4.17 UJ	6.41 UJ	6.41 UJ	4.17 UJ	4.17 UJ	6.41 UJ	4.17 UJ	2.56 UJ	6.41 UJ	6.19 J	6.41 UJ	6.41 UJ
4	31040005N	--	E Thompson Ave	11/19/2020	MRS03-APN31040005N-SS001	0	µg/kg	3.21 J	0.517 J	4.24 U	6.94 J	8.71 J	12.5	6.62 J	5.60 J	10.5	6.52 U	17.7	2.61 U	7.27 J	5.75 J	7.02 J	15.8
					MRS03-APN31040005N-SS002	0	µg/kg	3.21 J	2.09 J	11.7	66.5 J	73.5 J	95.1 J	41.7 J	41.4 J	59.3 J	12.7	91.7 J	1.68 J	59.3 J	6.60 J	44.6 J	81.9 J
					MRS03-APN31040005N-SS003	0	µg/kg	3.33 J	7.39 J	17.3	53.8	50.3	68.3	25.9	22.9	48.3	7.72 J	12.3	6.61 J	37.2	6.18 J	86.1	96.8
					MRS03-APN31040005N-SS1001	1	µg/kg	3.39 J	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	6.50 J	6.57 U	6.57 U
					MRS03-APN31040005N-SS1002	1	µg/kg	2.71 J	0.315 J	4.12 U	4.53 J	4.83 J	7.27 J	3.12 J	2.61 J	5.28 J	6.35 U	11.4	2.54 U	3.68 J	5.09 J	4.89 J	10
					MRS03-APN31040005N-SS1003	1	µg/kg	2.51 J	1.06 U	4.29 U	4.29 U	4.29 U	6.60 U	6.60 U	4.29 U	4.29 U	6.60 U	4.29 U	2.64 U	6.60 U	5.06 J	6.60 U	6.60 U
					MRS03-APN31040005N-SS2001	2	µg/kg	3.10 J	1.00 U	4.07 U	4.07 U	4.07 U	6.26 U	6.26 U	4.07 U	4.07 U	6.26 U	4.07 U	2.50 U	6.26 U	6.34 J	6.26 U	6.26 U
					MRS03-APN31040005N-SS2002	2	µg/kg	3.56 J	0.956 U	3.88 U	3.88 U	3.88 U	5.97 U	5.97 U	3.88 U	3.88 U	5.97 U	3.88 U	2.39 U	5.97 U	6.66 J	5.97 U	5.97 U
					MRS03-APN31040005N-SS2003	2	µg/kg	3.17 J	0.975 U	3.96 U	3.96 U	2.19 J	2.68 J	6.09 U	3.96 U	1.94 J	6.09 U	3.41 J	2.44 U	6.09 U	5.48 U	6.09 U	3.24 J
4	31040005O	--	E Thompson Ave	11/19/2020	MRS03-APN31040005O-SS001	0	µg/kg	2.28 J	0.478 J	1.51 J	9.59	11.5	15.4	6.61 J	5.05 J	11.2	6.02 U	23.1	2.41 U	8.45 J	4.13 J	9.6	19.9
					MRS03-APN31040005O-SS002	0	µg/kg	2.25 J	0.419 J	3.96 U	7.52 J	9.24	13.4	6.55 J	5.64 J	10.5	2.74 J	18.3	2.44 U	7.04 J	4.00 J	6.54 J	16.2
					MRS03-APN31040005O-SS003	0	µg/kg	2.33 J	1.99 J	6.13 J	40	37.4	51	18.6	17.4	42.5	5.43 J	81.7	1.36 J	26.4	4.89 J	32.9	82.1
					MRS03-APN31040005O-SS1001	1	µg/kg	2.31 J	1.01 U	4.09 U	1.83 J	2.36 J	3.20 J	6.29 U	4.09 U	2.27 J	6.29 U	3.86 J	2.51 U	6.29 U	4.75 J	6.29 U	3.77 J
					MRS03-APN31040005O-SS1002	1	µg/kg	3.34 J	1.04 U	4.24 U	2.90 J	3.17 J	4.54 J	6.52 U	4.24 U	3.26 J	6.52 U	6.58 J	2.61 U	2.66 J	6.24 J	2.83 J	6.04 J
				11/20/2020	MRS03-APN31040005O-SS1003	1	µg/kg	2.74 J	0.593 J	4.08 U	6.51 J	5.59 J	7.79 J	3.02 J	2.84 J	6.31 J	6.28 U	16.9	1.47 J	4.58 J	5.94 J	8.63 J	15
				11/19/2020	MRS03-APN31040005O-SS2001	2	µg/kg	4.51 J	1.03 U	4.19 U	4.19 U	4.19 U	6.45 U	6.45 U	4.19 U	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	37.2	6.45 U	6.45 U
					MRS03-APN31040005O-SS2002	2	µg/kg	3.83 J	1.0 U	4.08 U	4.08 U	4.08 U	6.28 U	6.28 U	4.08 U	4.08 U	6.28 U	4.08 U	2.51 U	6.28 U	7.26 J	6.28 U	6.28 U
				11/20/2020	MRS03-APN31040005O-SS2003	2	µg/kg	3.02 J	0.993 U	4.03 U	4.03 U	4.03 U	6.20 U	6.20 U	4.03 U	4.03 U	6.20 U	4.03 U	2.48 U	6.20 U	6.14 J	6.20 U	6.20 U
5	32404082B	3800	E. Shaeffer Ave.	3/30/2021	MRS03-APN324040482B-SS001	0	µg/kg	1.38 J	1.05 U	4.25 U	4.25 U	1.74 J	3.58 J	2.41 J	4.25 U	4.22 J	6.54 U	4.98 J	2.62 U	6.54 U	1.33 J	2.40 J	6.54 U
					MRS03-APN324040482B-SS002	0	µg/kg	1.33 J	1.04 U	4.24 U	4.24 U	4.24 U	2.76 J	6.52 U	4.24 U	3.45 J	6.52 U	4.77 J	2.61 U	6.52 U	1.53 J	6.52 U	6.52 U
					MRS03-APN324040482B-SS003	0	µg/kg	1.37 J	1.06 U	4.29 U	4.29 U	4.29 U	5.78 J	2.91 J	4.29 U	5.44 J	6.60 U	5.48 J	2.64 U	6.60 U	1.58 J	2.56 J	6.60 U
					MRS03-APN324040482B-SS1001	1	µg/kg	1.96 U	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.62 U	6.54 U	1.96 U	6.54 U	6.54 J
					MRS03-APN324040482B-SS1002	1	µg/kg	2.00 U	1.06 U	4.32 U	4.32 U	4.32 U	6.65 U	6.65 U	4.32 U	4.32 U	6.65 U	4.32 U	2.66 U	6.65 U	2.00 U	6.65 U	6.65 U
					MRS03-APN324040482B-SS1003	1	µg/kg	2.00 U	1.07 U	4.33 U	3.38 J	3.21 J	3.95 J	3.23 J	2.97 J	3.89 J	6.67 U	4.33 U	2.67 U	6.67 U	2.00 U	6.67 U	6.67 U
					MRS03-APN324040482B-SS2001	2	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.97 U	6.57 U	6.57 U
					MRS03-APN324040482B-SS2002	2	µg/kg	1.98 U	1.06 U	4.29 U	4.29 U	4.29 U	6.60 U	6.60 U	4.29 U	4.29 U	6.60 U	4.29 U	2.64 U	6.60 U	1.98 U	6.60 U	6.60 U
					MRS03-APN324040482B-SS2003	2	µg/kg	1.87 U	0.997 U	4.05 U	4.05 U	4.05 U	6.23 U	6.23 U	4.05 U	4.05 U	6.23 U	4.05 U	2.49 U	6.23 U	1.87 U	6.23 U	6.23 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
6	32404126	3970	E. Shaeffer Ave.	1/20/2021	MRS03-APN32404126-SS001	0	µg/kg	1.83 J	1.05 UJ	4.26 UJ	10.6 J	10.6 J	17.2 J	7.10 J	6.89 J	14.7 J	6.55 UJ	15.4 J	1.00 J	8.09 J	3.06 J	6.42 J	13.7 J
					MRS03-APN32404126-SS002	0	µg/kg	3.00 J	1.04 UJ	4.23 UJ	15.2 J	15.6 J	24.7 J	10.5 J	8.64 J	22.7 J	2.91 J	25.6 J	1.78 J	12.9 J	5.24 J	11.4 J	22.3 J
					MRS03-APN32404126-SS003	0	µg/kg	2.86 J	0.955 U	3.88 U	6.60 J	8.01 J	13.2	6.07 J	5.07 J	11.6	5.97 U	12.6	1.25 J	6.70 J	5.73 J	7.48 J	11.0
					MRS03-APN32404126-SS1001	1	µg/kg	1.29 J	1.06 UJ	4.32 UJ	2.29 J	2.43 J	4.16 J	6.64 UJ	4.32 UJ	3.32 J	6.64 UJ	3.98 J	0.974 J	2.22 J	2.65 J	3.32 J	3.49 J
					MRS03-APN32404126-SS1002	1	µg/kg	1.91 J	1.04 U	4.23 UJ	1.82 J	1.85 J	3.48 J	6.51 U	4.23 U	2.79 J	6.51 U	3.11 J	1.14 J	6.51 U	4.25 J	3.42 J	2.54 J
					MRS03-APN32404126-SS1003	1	µg/kg	2.16 J	1.00 U	4.06 U	J2.14	1.69 J	3.07 J	6.25 U	4.06 U	2.73 J	6.25 U	4.64 J	1.43 J	6.25 U	4.37 J	5.00 J	3.51 J
					MRS03-APN32404126-SS2001	2	µg/kg	2.55 J	1.01 U	4.10 U	4.10 U	4.10 U	6.30 U	6.30 U	4.10 U	4.10 U	6.30 U	4.10 U	2.52 U	6.30 U	4.01 J	6.30 U	6.30 U
					MRS03-APN32404126-SS2002	2	µg/kg	2.21 J	1.03 U	4.18 U	4.18 U	4.18 U	6.44 U	6.44 U	4.18 U	4.18 U	6.44 U	4.18 U	1.44 J	6.44 U	4.31 J	2.50 J	6.44 U
					MRS03-APN32404126-SS2003	2	µg/kg	1.85 J	1.03 U	4.16 U	4.16 U	4.16 U	6.41 U	6.41 U	4.16 U	4.16 U	6.41 U	4.16 U	0.970 J	6.41 U	3.74 J	6.41 U	6.41 U
7	32404127	3966	E. Shaeffer Ave.	1/21/2021	MRS03-APN32404127-SS001	0	µg/kg	2.63 J	0.554 J	1.96 J	21.4 J	23.0 J	34.1 J	16.1 J	14.2 J	30.1 J	5.49 J	32.1 J	2.62 UJ	19.4 J	9.84 UJ	10.2 J	30.9 J
					MRS03-APN32404127-SS002	0	µg/kg	5.31 J	0.736 J	1.59 J	37.9	43.4	64.6	27.9	25.2	46.6	7.34 J	43.5	1.62 J	34.4	9.29 U	10.7	41.8
					MRS03-APN32404127-SS003	0	µg/kg	7.75 J	1.04 U	4.22 U	14.2	18.1	26.4	11.9	11.1	21.6	3.41 J	19.7	2.60 U	14.7	16.0	6.26 J	19.1
					MRS03-APN32404127-SS1001	1	µg/kg	1.78 J	1.05 UJ	4.25 UJ	6.30 J	5.48 J	7.36 J	3.22 J	3.10 J	6.99 J	6.54 UJ	9.53 J	2.61 UJ	4.05 J	9.80 UJ	2.98 J	10.3 J
					MRS03-APN32404127-SS1002	1	µg/kg	2.94 J	1.04 U	4.24 U	6.55 J	7.49 J	11.6	5.90 J	4.40 J	10.1	6.52 U	8.59 J	2.61 U	6.05 J	9.78 U	2.81 J	8.69 J
					MRS03-APN32404127-SS1003	1	µg/kg	3.24 J	1.03 U	4.19 U	13.4	15.3	21.7	11.1	9.54 J	17.1	4.61 J	15.4	2.58 U	12.5	14.7	4.19 J	16.2
					MRS03-APN32404127-SS2001	2	µg/kg	2.71 J	1.06 U	4.31 U	4.31 U	4.31 U	6.64 U	6.64 U	4.31 U	4.31 U	6.64 U	4.31 U	2.65 U	6.64 U	9.95 U	6.64 U	6.64 U
					MRS03-APN32404127-SS2002	2	µg/kg	1.93 J	1.04 UJ	4.23 UJ	4.23 UJ	4.23 UJ	6.51 UJ	6.51 UJ	4.23 UJ	4.23 UJ	6.51 UJ	4.23 UJ	2.60 UJ	6.51 UJ	9.77 UJ	6.51 UJ	6.51 UJ
					MRS03-APN32404127-SS2003	2	µg/kg	2.63 J	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	9.85 U	6.57 U	6.57 U
8	32404131	3946	E. Shaeffer Ave.	1/19/2021	MRS03-APN32404131-SS001	0	µg/kg	3.75 J	0.984 U	1.35 J	5.38 J	7.93 J	12.1	9.55	3.71 J	15.4	6.15 UJ	15.5	1.26 J	5.86 J	5.90 J	9.72	12.7
					MRS03-APN32404131-SS002	0	µg/kg	3.74 J	1.00 U	4.07 U	5.40 J	7.92 J	12.6	9.72	3.76 J	16	6.26 U	19.5	1.42 J	6.15 J	5.81 J	15.9	15.5
					MRS03-APN32404131-SS003	0	µg/kg	3.76 J	0.978 U	3.97 U	6.87 J	11.2	13.8	13.6	3.74 J	17.9	2.96 J	11.8	1.18 J	7.71 J	5.14 J	7.78 J	11.5
					MRS03-APN32404131-SS1001	1	µg/kg	1.72 J	1.00 U	4.06 U	1.69 J	1.80 J	3.25 J	6.25 U	4.06 U	2.80 J	6.25 U	3.41 J	2.50 U	6.25 U	3.93 J	2.64 J	3.00 J
					MRS03-APN32404131-SS1002	1	µg/kg	1.67 J	1.04 U	4.21 U	4.21 U	1.48 J	2.81 J	6.47 U	4.21 U	2.29 J	6.47 U	2.38 J	2.59 U	6.47 U	3.76 J	2.49 J	6.47 U
					MRS03-APN32404131-SS1003	1	µg/kg	2.57 J	1.04 U	4.23 U	2.15 J	2.15 J	4.18 J	4.76 J	4.23 U	3.63 J	6.50 U	4.45 J	1.03 J	2.36 J	5.29 J	3.55 J	2.96 J
					MRS03-APN32404131-SS2001	2	µg/kg	1.35 J	1.02 U	4.14 U	4.14 U	4.14 UJ	6.37 U	6.37 U	4.14 U	4.14 U	6.37 U	4.14 U	2.55 U	6.37 U	3.02 J	6.37 U	6.37 U
					MRS03-APN32404131-SS2002	2	µg/kg	1.66 J	1.04 U	4.22 U	4.22 U	4.22 U	6.49 U	6.49 U	4.22 U	4.22 U	6.49 U	4.22 U	2.60 U	6.49 U	3.68 J	6.49 U	6.49 U
					MRS03-APN32404131-SS2003	2	µg/kg	1.62 J	1.03 U	4.19 U	4.19 U	4.19 U	6.45 U	6.45 U	4.19 U	4.19 U	6.45 U	4.19 U	2.58 U	6.45 U	3.44 J	6.45 U	6.45 U
9	32404152_153	3905_09	E. L John Ave.	3/9/2021	MRS03-APN32404152_153-SS001	0	µg/kg	6.92 J	1.02 J	2.04 J	13.1	16.6	24.2	13.7	10.6	18.4	3.29	26.3	1.40 J	17.1	5.79 J	11.0	24.4
					MRS03-APN32404152_153-SS002	0	µg/kg	2.05 J	0.494 J	1.44 J	9.48 J	16.9	19.2	11.4	8.15	14.6	2.76 J	20.9	2.66 U	13.9	1.80 J	8.08	18.5
					MRS03-APN32404152_153-SS003	0	µg/kg	2.16 J	0.458 J	4.30 U	12.6	19.7	21.8	13.8	8.82 J	18.0	4.26 J	22.3	2.65 U	15.4	1.95 J	8.12 J	20.0
					MRS03-APN32404152_153-SS1001	1	µg/kg	2.01 J	1.06 U	4.29 U	5.54 J	8.46 J	9.10 J	6.19 J	4.08 J	7.51 J	6.60 U	8.73 J	2.64 U	6.62 J	2.34 J	3.03 J	8.12 J
					MRS03-APN32404152_153-SS1002	1	µg/kg	1.12 J	1.03 U	4.17 U	2.34 J	3.99 J	5.15 J	3.14 J	4.17 U	3.54 J	6.42 U	3.44 J	2.57 U	3.31 J	1.07 J	6.42 U	3.55 J
					MRS03-APN32404152_153-SS1003	1	µg/kg	1.03 J	1.06 U	4.32 U	1.89 J	2.80 J	3.18 J	6.65 U	4.32 U	2.52 J	6.65 U	2.85 J	2.66 U	2.32 J	1.02 J	6.65 U	2.54 J
					MRS03-APN32404152_153-SS2001	2	µg/kg	1.97 U	1.05 U	4.28 U	4.28 U	4.28 U	6.58 U	6.58 U	4.28 U	4.28 U	6.58 U	4.28 U	2.63 U	6.58 U	0.911 J	6.58 U	6.58 U
					MRS03-APN32404152_153-SS2002	2	µg/kg	0.842 J	0.987 U	4.01 U	4.01 U	4.01 U	6.17 U	9.53	4.01 U	4.01 U	6.17 U	4.01 U	2.47 U	2.43 J	1.24 J	6.17 U	6.17 U
					MRS03-APN32404152_153-SS2003	2	µg/kg	1.81 U	0.964 U	3.91 U	3.91 U	3.91 U	6.02 U	6.02 U	3.91 U	3.91 U	6.02 U	3.91 U	2.41 U	6.02 U	0.823 J	6.02 U	6.02 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
10	32404194	3974	E. Devlin Ave.	2/11/2021	MRS03-APN32404194-SS001	0	µg/kg	3.11 J	0.945 U	1.40 J	4.34 J	5.20 J	7.26 J	4.62 J	2.81 J	9.64	5.90 U	10.4	1.71 J	4.16 J	8.85 U	6.32 J	8.28 J
					MRS03-APN32404194-SS002	0	µg/kg	1.68 J	1.03 U	4.17 U	3.94 J	5.12 J	6.78 J	4.46 J	3.02 J	6.73 J	6.42 U	8.68 J	0.954 J	4.29 J	1.93 U	4.34 J	7.58 J
					MRS03-APN32404194-SS003	0	µg/kg	1.35 J	0.969 U	3.93 U	4.08 J	5.70 J	7.61 J	4.98 J	2.91 J	10.1	6.05 U	8.29 J	2.42 U	4.64 J	9.08 U	4.81 J	7.16 J
					MRS03-APN32404194-SS1001	1	µg/kg	0.919 J	1.01 U	4.12 U	4.12 U	4.12 U	6.33 U	6.33 U	4.12 U	4.12 U	6.33 U	4.12 U	2.53 U	6.33 U	9.50 U	6.33 U	6.33 U
					MRS03-APN32404194-SS1002	1	µg/kg	0.747 J	0.967 U	3.93 UJ	3.93 U	1.54 J	6.04 UJ	6.04 UJ	3.93 UJ	3.93 UJ	6.04 UJ	1.98 J	2.42 UJ	6.04 UJ	1.81 UJ	6.04 UJ	6.04 UJ
					MRS03-APN32404194-SS1003	1	µg/kg	0.856 J	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.62 U	6.54 U	9.82 U	6.54 U	6.54 U
					MRS03-APN32404194-SS2001	2	µg/kg	1.03 J	1.00 U	4.07 U	4.07 U	4.07 U	6.26 U	6.26 U	4.07 U	4.07 U	6.26 U	4.07 U	2.50 U	6.26 U	9.39 U	6.26 U	6.26 U
					MRS03-APN32404194-SS2002	2	µg/kg	1.96 U	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.62 U	6.54 U	1.96 U	6.54 U	6.54 U
					MRS03-APN32404194-SS2003	2	µg/kg	0.885 J	0.981 U	3.98 U	3.98 U	3.98 U	6.13 U	6.13 U	3.98 U	3.98 U	6.13 U	3.98 U	2.45 U	6.13 U	9.20 U	6.13 U	6.13 U
11	32404549A	3970	E. Hearne Ave.	3/10/2021	MRS03-APN32404549A-SS001	0	µg/kg	2.42 J	1.04 J	10.5	23.6	38.1	45.5	25.4	18.9	36.9	6.02 J	50.6	1.33 J	28.2	2.54 J	18.3	48.2
					MRS03-APN332404549A-SS002	0	µg/kg	1.66 J	0.531 J	5.46 J	11.1 J	21.9 J	26.7 J	15.7 J	7.94 J	18.8 J	3.35 J	21.3 J	0.877 J	19.2 J	1.49 J	7.96 J	20.0 J
					MRS03-APN32404549A-SS003	0	µg/kg	1.65 J	0.442 J	4.10 J	11.6	21.4	27.3	14.9	8.30	19.6	3.25 J	23.7	2.49 U	15.4	1.42	8.65	21.0
					MRS03-APN32404549A-SS1001	1	µg/kg	1.95 U	1.04 U	4.23 U	2.02 J	3.51 J	3.67 J	6.51 U	4.23 U	2.97 J	6.51 U	3.40 J	2.61 U	2.25 J	0.802 J	6.51 UJ	3.32 J
					MRS03-APN32404549A-SS1002	1	µg/kg	0.880 J	1.06 U	4.28 U	2.24 J	3.84 J	4.03 J	6.59 U	4.28 U	3.36 J	6.59 U	3.68 J	2.64 U	2.54 J	0.936 J	6.59 U	3.68 J
					MRS03-APN32404549A-SS1003	1	µg/kg	1.71 J	0.979 U	1.62 J	6.64 J	7.45 J	7.12 J	3.51 J	2.41 J	8.17 J	6.12 U	10.2	2.45 U	3.87 J	1.26 J	4.61 J	14.5
					MRS03-APN32404549A-SS2001	2	µg/kg	1.81 UJ	0.965 UJ	3.92 UJ	3.92 UJ	3.92 UJ	6.03 UJ	6.03 UJ	3.92 UJ	3.92 UJ	6.03 UJ	3.92 UJ	2.41 UJ	6.03 UJ	0.669 J	6.03 UJ	6.03 UJ
					MRS03-APN32404549A-SS2002	2	µg/kg	0.626 J	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	0.687 J	6.63 U	6.63 U
					MRS03-APN32404549A-SS2003	2	µg/kg	0.752 J	1.02 U	4.15 U	4.15 U	4.15 U	6.38 U	6.38 U	4.15 U	4.15 U	6.38 U	4.15 U	2.55 U	6.38 U	0.745 J	6.38 U	6.38 U
12	32404558*	3920	E HearneAve	2/26/2020	MRS03-APN32404558-SS001R	0	µg/kg	2.65 J	1.31 J	5.02 J	54.3	68.9	101	52.6	36.4	75.2	14.7	71.3	2.56 J	54.0	4.39 J	20.3	74.0
					MRS03-APN32404558-SS002R	0	µg/kg	2.70 J	2.51 J	12.2	128	**137**	193	81.2	77.4	151	26.8	166	2.90 J	94.3	4.27 J	44.7	160
					MRS03-APN32404558-SS003R	0	µg/kg	3.28 J	1.70 J	6.43 J	74.5 J	96.8 J	137 J	65.4 J	46.7 J	94.6 J	19.0 J	96.0 J	2.93 J	67.9 J	5.97 J	27.8 J	103 J
					MRS03-APN32404558-SS1001R	1	µg/kg	2.01 J	0.963 J	2.26 J	26.9	36.7	51.7	25.7	18.1	35.9	7.20 J	33.3	1.45 J	28.2	3.48 J	10.3	37.6
					MRS03-APN32404558-SS1002R	1	µg/kg	0.753 J	0.760 J	2.31 J	21.0	28.8	39.9	19.0	13.2	27.7	5.63 J	30.5	2.67 U	19.7	1.43 J	11.0	32.5
					MRS03-APN32404558-SS1003R	1	µg/kg	1.03 J	0.806 J	2.32 J	33.2	43.8	59.9	25.6	20.7	40.8	7.90 J	38.2	0.995 J	27.7	1.93 J	10.7	41.8
					MRS03-APN32404558-SS2001R	2	µg/kg	0.657 J	0.519 J	4.21 U	16.2	19.1	27.7	10.8	10.1	19.4	3.72 J	15.8	2.59 U	12.8	1.62 J	3.98 J	18.2
					MRS03-APN32404558-SS2002R	2	µg/kg	1.91 U	1.02 U	4.14 U	4.14 U	1.66 J	6.37 U	6.37 U	4.14 U	4.14 U	6.37 U	4.14 U	2.55 U	6.37 U	1.35 J	6.37 U	6.37 U
					MRS03-APN32404558-SS2003R	2	µg/kg	1.85 U	0.989 U	4.02 U	2.62 J	3.18 J	4.44 J	6.18 U	4.02 U	3.23 J	6.18 U	3.66 J	2.47 U	2.14 J	1.17 J	6.18 U	3.88 J
13	32404588	3975	E. Devlin Ave.	2/26/2020	MRS03-APN32404588-SS001	0	µg/kg	3.60 J	1.05 U	11.7	60.6	57.1	82.5	44.5	31.1	65.8	8.88 J	119	1.02 J	51.3	7.29 J	56.6	97.4
					MRS03-APN32404588-SS002	0	µg/kg	2.96 J	1.02 U	4.16 U	9.01 J	11.0	16.5	8.48 J	6.61 J	14.2	6.40 U	14.0	2.56 U	10.1	5.92 J	4.81 J	13.1
					MRS03-APN32404588-SS003	0	µg/kg	2.84 J	1.04 U	4.24 U	3.97 J	5.25 J	8.98 J	4.44 J	3.09 J	8.22 J	6.53 U	11.5	2.61 U	4.98 J	5.13 J	5.74 J	9.84
					MRS03-APN32404588-SS1001	1	µg/kg	2.00 U	1.06 U	4.32 U	4.32 U	4.32 U	6.65 U	6.65 U	4.32 U	4.32 U	6.65 U	2.29 J	2.66 U	6.65 U	2.54 J	6.65 U	2.25 J
					MRS03-APN32404588-SS1002	1	µg/kg	1.31 J	1.06 U	4.29 U	4.29 U	4.29 U	6.60 U	6.60 U	4.29 U	4.29 U	6.60 U	4.29 U	2.64 U	6.60 U	3.02 J	6.60 U	6.60 U
					MRS03-APN32404588-SS1003	1	µg/kg	1.92 U	1.02 U	4.16 U	4.16 U	4.16 U	6.40 U	6.40 U	4.16 U	4.16 U	6.40 U	2.01 J	2.56 U	6.40 U	2.04 J	6.40 U	6.40 U
					MRS03-APN32404588-SS2001	2	µg/kg	1.91 U	1.02 U	4.13 U	4.13 U	4.13 U	6.36 U	6.36 U	4.13 U	4.13 U	6.36 U	4.13 U	2.54 U	6.36 U	1.44 J	6.36 U	6.36 U
					MRS03-APN32404588-SS2002	2	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.78 J	6.57 U	6.57 U
					MRS03-APN32404588-SS2003	2	µg/kg	1.99 U	1.06 U	4.31 U	4.31 U	4.31 U	6.64 U	6.64 UJ	4.31 U	4.31 U	6.64 U	4.31 U	2.65 U	6.64 U	1.75 J	6.64 U	6.64 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
14	32404589	3979	E. Devlin Ave.	1/13/2021	MRS03-APN32404589-SS001	0	µg/kg	1.93 U	1.03 U	4.17 U	4.41 J	4.17 U	9.27 J	4.14 J	3.25 J	9.00 J	6.42 UJ	11.4	2.57 U	4.33 J	2.93 J	5.22 J	9.05 J
					MRS03-APN32404589-SS002	0	µg/kg	1.49 J	1.05 U	4.26 U	3.03 J	4.26 UJ	7.44 J	3.73 J	2.73 J	7.19 J	6.56 UJ	11.2	2.63 U	3.69 J	3.59 J	6.01 J	8.44 J
					MRS03-APN32404589-SS003	0	µg/kg	1.62 J	0.995 U	1.48 J	3.23 J	4.04 UJ	8.95 J	3.67 J	3.37 J	9.16 J	6.22 UJ	11.4	0.945 J	3.98 J	4.13 J	5.91 J	8.90 J
					MRS03-APN32404589-SS1001	1	µg/kg	1.88 U	1.00 U	4.07 U	4.07 U	1.44 J	2.97 J	6.27 UJ	4.07 UJ	2.52 J	6.27 UJ	2.36 J	2.51 U	6.27 UJ	2.15 J	6.27 U	6.27 U
					MRS03-APN32404589-SS1002	1	µg/kg	1.95 U	1.04 U	4.21 U	4.21 U	4.21 UJ	6.49 UJ	6.49 UJ	4.21 UJ	2.30 J	6.49 UJ	4.21 U	2.59 U	6.49 UJ	1.84 J	6.49 U	6.49 U
					MRS03-APN32404589-SS1003	1	µg/kg	1.95 U	1.04 U	4.23 U	4.23 U	4.23 U	6.51 UJ	6.51 UJ	4.23 UJ	2.38 J	6.51 UJ	2.18 J	2.61 U	6.51 UJ	2.26 J	6.51 U	2.25 J
					MRS03-APN32404589-SS2001	2	µg/kg	1.89 U	1.01 U	4.10 U	4.10 U	4.10 UJ	6.31 UJ	6.31 UJ	4.10 UJ	4.10 U	6.31 UJ	4.10 U	2.52 U	6.31 UJ	2.38 J	6.31 U	6.31 U
					MRS03-APN32404589-SS2002	2	µg/kg	1.98 U	1.06 U	4.29 U	4.29 U	4.29 UJ	6.61 UJ	6.61 UJ	4.29 UJ	4.29 U	6.61 UJ	4.29 U	2.64 U	6.61 UJ	2.02 J	6.61 U	6.61 U
					MRS03-APN32404589-SS2003	2	µg/kg	1.96 U	1.05 U	4.25 U	4.25 U	4.25 UJ	6.54 UJ	6.54 UJ	4.25 UJ	4.25 U	6.54 UJ	4.25 U	2.61 U	6.54 UJ	3.37 J	6.54 U	6.54 U
15	32404663A	3945	E. Hearne Ave.	4/8/2021	MRS03-APN32404663A-SS001	0	µg/kg	1.02 J	1.91 J	4.94 J	47.3	70.7	76.0	41.3	32.5	58.7	10.9	67.2	2.62 U	50.7	2.15 J	26.0	70.0
					MRS03-APN32404663A-SS002	0	µg/kg	1.07 J	2.65 J	6.19	55.4	80.1	84.9	43.8	38.1	68.0	13.1	76.6	1.25 J	58.6	2.31 J	30.1	82.6
					MRS03-APN32404663A-SS003	0	µg/kg	11.0	51.5	88.3	628	**810**	788	317	288	728	110	882	17.1	457	22.5	408	1050
					MRS03-APN32404663A-SS1001	1	µg/kg	1.95 U	0.489 J	2.36 J	17.5	21.8	27.0	14.3	8.67 J	18.0	3.70 J	23.0	2.61 U	19.4	1.95 U	10.6	22.1
					MRS03-APN32404663A-SS1002	1	µg/kg	0.985 J	2.31 J	6.46 J	44.3	51.5	56.2	27.5	24.3	44.6	8.13 J	53.3	1.21 J	36.8	2.00 J	27.5	53.4
					MRS03-APN32404663A-SS1003	1	µg/kg	0.917 J	1.89 J	3.36 J	34.8	49.1	56.7	28.0	18.6	42.7	7.86 J	48.2	2.64 U	36.3	2.00 J	17.7	52.0
					MRS03-APN32404663A-SS2001	2	µg/kg	1.18 J	2.71 J	4.51 J	42.2	55.5	58.5	28.2	20.0	46.0	9.16 J	51.8	2.61 U	34.2	2.26 J	20.3	59.0
					MRS03-APN32404663A-SS2002	2	µg/kg	1.98 U	1.06 U	4.29 U	2.74 J	2.47 J	3.16 J	6.60 U	4.29 U	3.78 J	6.60 U	2.28 J	2.64 U	6.60 U	1.98 U	6.60 U	2.36 J
					MRS03-APN32404663A-SS2003	2	µg/kg	1.95 U	1.04 UJ	4.23 U	3.10 J	3.70 J	4.13 J	2.60 J	2.15 J	3.22 J	6.51 U	3.60 J	2.60 UJ	2.69 J	2.08 J	6.51 U	3.56 J
16	32404668*	3979	E. Hearne Ave	2/20/2020	MRS03-APN32404668-SS001R	0	µg/kg	2.46 J	0.353 J	4.21 UJ	10.0 J	13.8 J	17.8 J	10.4 J	6.53 J	16.5 J	6.49 UJ	18.0 J	2.59 UJ	10.1 J	3.87 J	8.23 J	16.3 J
					MRS03-APN32404668-SS002R	0	µg/kg	5.73 J	0.363 J	1.47 J	10.4 J	14.8 J	17.8 J	10.8 J	7.19 J	15.8 J	2.53 J	16.6 J	2.45 UJ	10.2 J	9.72 J	8.27 J	14.8 J
					MRS03-APN32404668-SS003R	0	µg/kg	2.97 J	1.06 UJ	4.30 UJ	8.48 J	4.30 UJ	15.0 J	9.48 J	5.62 J	13.8 J	6.61 UJ	14.8 J	2.65 UJ	8.13 J	4.89 J	7.31 J	13.5 J
					MRS03-APN32404668-SS1001R	1	µg/kg	1.83 J	0.710 J	4.26 UJ	5.07 J	6.26 J	7.90 J	5.38 J	3.45 J	7.80 J	6.56 UJ	7.24 J	2.63 UJ	4.54 J	3.33 J	3.72 J	7.40 J
					MRS03-APN32404668-SS1002R	1	µg/kg	1.20 J	0.947 UJ	3.85 UJ	2.15 J	3.14 J	4.48 J	2.59 J	3.85 UJ	3.64 J	5.92 UJ	3.41 J	2.37 UJ	2.90 J	2.56 J	2.12 J	3.24 J
					MRS03-APN32404668-SS1003R	1	µg/kg	1.25 J	0.995 UJ	4.04 UJ	1.97 J	2.99 J	3.94 J	2.37 J	4.04 UJ	3.50 J	6.22 UJ	3.63 J	2.49 UJ	2.19 J	2.42 J	6.22 UJ	3.30 J
					MRS03-APN32404668-SS2001R	2	µg/kg	0.989 J	1.05 UJ	4.25 UJ	4.25 UJ	4.25 UJ	6.54 UJ	6.54 UJ	4.25 UJ	4.25 UJ	6.54 UJ	4.25 UJ	2.61 UJ	6.54 UJ	2.45 J	6.54 UJ	6.54 UJ
					MRS03-APN32404668-SS2002R	2	µg/kg	1.19 J	0.992 UJ	4.03 UJ	4.03 UJ	4.03 UJ	6.20 UJ	6.20 UJ	4.03 UJ	4.03 UJ	6.20 UJ	4.03 UJ	2.48 UJ	6.20 UJ	3.13 J	6.20 UJ	6.20 UJ
					MRS03-APN32404668-SS2003R	2	µg/kg	0.993 J	0.974 UJ	3.96 UJ	3.96 UJ	3.96 UJ	6.09 UJ	6.09 UJ	3.96 UJ	3.96 UJ	6.09 UJ	3.96 UJ	2.43 UJ	6.09 UJ	2.67 J	6.09 UJ	6.09 UJ
17	32405106	3846	E. Lum Ave.	2/4/2021	MRS03-APN32405106-SS001	0	µg/kg	0.852 J	1.03 U	1.86 J	18.1	23.6	33.6	18.8	13.2	26.5	4.85 J	34.6	2.57 U	22.4	2.03 J	11.6	34.8
					MRS03-APN32405106-SS002	0	µg/kg	1.95 J	0.554 J	4.11 U	14.6	20.3	28.5	16.0	10.5	22.2	4.12 J	25.7	2.53 U	19.0	7.32 J	8.92 J	26.3
					MRS03-APN32405106-SS003	0	µg/kg	1.45 J	0.997 U	1.60 J	16.4	21.8	31.2	17.0	11.8	25.1	4.39 J	33.7	2.49 U	20.2	2.48 J	12.5	33.7
					MRS03-APN32405106-SS1001	1	µg/kg	1.96 UJ	1.05 UJ	4.26 UJ	4.26 UJ	1.83 J	3.04 J	6.55 UJ	4.26 UJ	2.31 J	6.55 UJ	2.97 J	2.62 UJ	6.55 UJ	1.45 J	6.55 UJ	3.06 J
					MRS03-APN32405106-SS1002	1	µg/kg	1.06 J	0.972 U	3.95 U	3.95 U	3.95 U	2.24 J	6.07 U	3.95 U	3.95 U	6.07 U	2.22 J	2.43 U	6.07 U	2.13 J	6.07 U	2.19 J
					MRS03-APN32405106-SS1003	1	µg/kg	1.28 J	1.03 U	4.18 U	4.18 U	4.18 U	6.44 U	6.44 U	4.18 U	4.18 U	6.44 U	4.18 U	2.57 U	6.44 U	1.93 J	6.44 U	6.44 U
					MRS03-APN32405106-SS2001	2	µg/kg	0.911 J	0.990 UJ	4.02 UJ	4.02 UJ	4.02 UJ	6.19 UJ	6.19 UJ	4.02 UJ	4.02 UJ	6.19 UJ	4.02 UJ	2.48 UJ	6.19 UJ	1.63 J	6.19 UJ	6.19 UJ
					MRS03-APN32405106-SS2002	2	µg/kg	1.40 J	1.04 U	4.21 U	4.21 U	4.21 U	6.49 U	6.49 U	4.21 U	4.21 U	6.49 U	4.21 U	2.59 U	6.49 U	2.55 J	6.49 U	6.49 U
					MRS03-APN32405106-SS2003	2	µg/kg	1.31 J	1.03 U	4.19 U	4.19 U	4.19 U	6.44 U	6.44 U	4.19 U	4.19 U	6.44 U	4.19 U	2.58 U	6.44 U	2.34 J	6.44 U	6.44 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
18	32405107	3842	E. Lum Ave.	2/4/2021	MRS03-APN32405107-SS001	0	µg/kg	1.73 J	1.06 UJ	1.80 J	15.9 J	21.7 J	30.9 J	16.6 J	11.6 J	26.0 J	4.35 J	32.2 J	2.64 UJ	20.1 J	2.34 J	10.3 J	32.0 J
					MRS03-APN32405107-SS002	0	µg/kg	2.21 J	0.748 J	2.90 J	24.7	29.6	40.9	21.8	16.5	37.7	6.68 J	52.0	2.66 U	26.3	3.04 J	17.5	52.5
					MRS03-APN32405107-SS003	0	µg/kg	1.72 J	1.33 J	3.80 J	20.8	23.4	37.5	17.2	15.6	42.0	4.39 J	90.9	1.14 J	20.8	2.68 J	59.2	80.8
					MRS03-APN32405107-SS1001	1	µg/kg	1.60 J	1.03 U	4.18 U	5.35 J	5.99 J	9.49 J	4.15 J	3.66 J	7.75 J	6.44 U	11.1	2.57 U	5.06 J	2.47 J	3.77 J	11.9
					MRS03-APN32405107-SS1002	1	µg/kg	0.950 J	0.991 U	4.02 U	5.21 J	5.89 J	9.05 J	4.61 J	3.75 J	7.85 J	6.19 U	10.3	2.48 U	5.28 J	1.91 J	3.34 J	10.5
					MRS03-APN32405107-SS1003	1	µg/kg	0.781 J	1.02 UJ	4.12 UJ	2.61 J	3.15 J	5.84 J	2.89 J	2.06 J	4.43 J	6.35 UJ	5.23 J	2.54 UJ	3.28 J	1.48 J	6.35 UJ	5.29 J
					MRS03-APN32405107-SS2001	2	µg/kg	1.18 J	1.06 U	4.30 U	4.30 U	4.30 U	6.61 U	6.61 U	4.30 U	4.30 U	6.61 U	4.30 U	2.65 U	6.61 U	2.45 J	6.61 U	6.61 U
					MRS03-APN32405107-SS2002	2	µg/kg	1.42 J	0.985 U	4.00 U	4.00 U	4.00 U	6.15 U	6.15 U	4.00 U	4.00 U	6.15 U	4.00 U	2.46 U	6.15 U	2.59 J	6.15 U	6.15 U
					MRS03-APN32405107-SS2003	2	µg/kg	0.912 J	1.04 U	4.24 U	4.24 U	4.24 U	6.52 U	6.52 U	4.24 U	4.24 U	6.52 U	4.24 U	2.61 U	6.52 U	2.02 J	6.52 U	6.52 U
19	32405166A	4026	E. Lum Ave.	2/18/2021	MRS03-APN32405166A-SS001	0	µg/kg	1.79 U	0.957 U	3.89 U	6.10 J	8.77 J	12.9	6.10 J	5.12 J	9.60	5.98 U	13.8	2.39 U	6.98 J	1.75 J	5.18 J	12.2
					MRS03-APN32405166A-SS002	0	µg/kg	0.922 J	0.460 J	4.15 U	5.13 J	7.56 J	13.0	6.60 J	4.94 J	8.74 J	6.39 U	10.5	1.25 J	7.50 J	2.19 J	5.67 J	8.43 J
					MRS03-APN32405166A-SS003	0	µg/kg	1.25 J	1.04 U	4.24 U	4.04 J	6.01 J	11.3	6.39 J	4.39 J	7.60 J	6.52 U	9.03 J	2.61 U	7.25 J	1.75 J	3.81 J	7.50 J
					MRS03-APN32405166A-SS1001	1	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	1.65 J	6.57 U	6.57 U	4.27 U	2.05 J	6.57 U	2.61 J	2.63 U	6.57 U	1.97 U	6.57 U	6.57 U
					MRS03-APN32405166A-SS1002	1	µg/kg	1.85 U	0.987 U	4.01 U	4.01 U	1.41 J	6.17 U	6.17 U	4.01 U	4.01 U	6.17 U	4.01 U	2.47 U	6.17 U	1.85 U	6.17 U	6.17 U
					MRS03-APN32405166A-SS1003	1	µg/kg	1.90 U	1.02 U	4.13 U	4.13 U	1.92 J	6.35 U	6.35 U	4.13 U	1.92 J	6.35 U	2.36 J	2.54 U	6.35 U	1.90 U	6.35 U	6.35 U
					MRS03-APN32405166A-SS2001	2	µg/kg	1.95 U	1.04 U	4.21 U	4.21 U	4.21 U	6.49 U	6.49 U	4.21 U	4.21 U	6.49 U	4.21 U	2.59 U	6.49 U	1.95 U	6.49 U	6.49 U
					MRS03-APN32405166A-SS2002	2	µg/kg	1.98 U	1.06 U	4.30 U	4.30 U	4.30 U	6.61 U	6.61 U	4.30 U	4.30 U	6.61 U	4.30 U	2.65 U	6.61 U	1.98 U	6.61 U	6.61 U
					MRS03-APN32405166A-SS2003	2	µg/kg	1.86 U	0.993 U	4.03 U	4.03 U	4.03 U	6.20 U	6.20 U	4.03 U	4.03 U	6.20 U	4.03 U	2.48 U	6.20 U	1.86 U	6.20 U	6.20 U
20	32405263A*	4016	E. Thompson Ave.	1/21/2020	MRS03-APN32405263A-SS001R	0	µg/kg	7.55 U	4.03 U	16.4 U	13.4 J	13.9 J	33.3 J	33.5 J	11.8 J	36.5 J	25.2 U	34.0 J	10.1 U	19.7 J	6.31 J	14.0 J	32.9 J
					MRS03-APN32405263A-SS002R	0	µg/kg	7.98 U	4.26 U	17.3 U	12.8 J	13.1 J	50.6	56.1	16.0 J	39.8 J	26.6 U	27.7 J	10.6 U	27.1 J	7.04 J	14.5 J	26.0 J
					MRS03-APN32405263A-SS003R	0	µg/kg	38.9 U	4.15 U	5.66 J	14.3 J	14.6 J	42.2	35.0 J	11.1 J	43.6	25.9 U	32.1 J	10.4 U	19.2 J	7.80 J	12.6 J	28.4 J
					MRS03-APN32405263A-SS1001R	1	µg/kg	9.87 U	1.05 U	4.28 U	2.28 J	2.69 J	5.42 J	3.08 J	2.07 J	5.08 J	6.58 U	2.34 J	2.63 U	2.68 J	4.80 J	2.17 J	6.58 U
					MRS03-APN32405263A-SS1002R	1	µg/kg	7.59 UJ	5.82 J	11.9 J	41.2 J	33.6 J	55.6 J	35.1 J	22.5 J	45.8 J	25.3 UJ	93.7 J	6.15 J	29.3 J	5.16 J	65.7 J	77.9 J
					MRS03-APN32405263A-SS1003	1	µg/kg	7.80 UJ	4.16 UJ	16.9 UJ	16.9 UJ	16.9 UJ	26.0 UJ	26.0 UJ	16.9 UJ	16.9 UJ	26.0 UJ	16.9 UJ	10.4 UJ	26.0 UJ	3.71 J	26.0 UJ	26.0 UJ
					MRS03-APN32405263A-SS2001R	2	µg/kg	9.57 U	1.02 U	4.15 U	4.15 U	4.15 U	6.38 U	6.38 U	4.15 U	4.15 U	6.38 U	4.15 U	2.55 U	6.38 U	4.92 J	6.38 U	6.38 U
					MRS03-APN32405263A-SS2002R	2	µg/kg	9.89 U	1.06 U	4.28 U	4.28 U	4.28 U	6.59 U	6.59 U	4.28 U	4.28 U	6.59 U	4.28 U	2.64 U	6.59 U	4.00 J	6.59 U	6.59 U
					MRS03-APN32405263A-SS2003R	2	µg/kg	9.84 UJ	1.05 UJ	4.26 UJ	4.26 UJ	4.26 UJ	6.56 UJ	6.56 UJ	4.26 UJ	4.26 UJ	6.56 UJ	4.26 UJ	2.62 UJ	6.56 UJ	4.56 J	6.56 UJ	6.56 UJ
21	32405265*	4008	E. Thompson Ave	1/22/2020	MRS-APN32405265-SS001R	0	µg/kg	39.4 U	4.20 U	17.1 U	13.3 J	16.1 J	26.6 J	17.0 J	9.22 J	22.2 J	26.3 U	12.0 J	3.80 J	14.3 J	6.05 J	9.06 J	12.2 J
					MRS-APN32405265-SS002R	0	µg/kg	38.8 U	4.14 U	16.8 U	14.7 J	18.8 J	28.3 J	19.2 J	11.0 J	26.0 J	25.9 U	14.7 J	10.3 U	16.3 J	5.08 J	9.68 J	15.0 J
					MRS-APN32405265-SS003R	0	µg/kg	39.0 U	1.47 J	16.9 U	19.3 J	22.8 J	38.0 J	24.0 J	12.8 J	34.5 J	26.0 U	28.3 J	4.97 J	21.6 J	8.73 J	15.3 J	24.5 J
					MRS-APN32405265-SS1001R	1	µg/kg	9.56 UJ	14.3 J	48.5 J	205 J	**206 J**	289 J	173 J	115 J	260 J	48.6 J	343	17.1 J	162 J	8.24 J	256 J	276
					MRS-APN32405265-SS1002R	1	µg/kg	9.93 U	0.319 J	4.30 U	5.12 J	6.30 J	10.1	6.29 J	3.84 J	8.41 J	6.62 U	6.06 J	1.11 J	6.11 J	5.53 J	3.81 J	5.56 J
					MRS-APN32405265-SS1003R	1	µg/kg	9.98 UJ	0.485 J	4.32 UJ	7.79 J	10.4 J	16.5 J	10.7 J	6.87 J	12.6 J	6.65 UJ	10.8 J	1.73 J	9.78 J	5.86 J	4.95 J	10.0 J
					MRS-AAPN32405265-SS2001R	2	µg/kg	9.42 U	1.01 U	4.08 U	2.39 J	2.58 J	4.47 J	2.59 J	2.02 J	3.66 J	6.28 U	4.08 U	2.51 U	2.55 J	5.28 J	6.28 U	6.28 U
					MRS-APN32404265-SS2002R	2	µg/kg	9.78 UJ	1.04 UJ	4.24 UJ	4.24 UJ	4.24 UJ	6.52 UJ	6.52 UJ	4.24 UJ	4.24 UJ	6.52 UJ	4.24 UJ	2.61 UJ	6.52 UJ	3.86 J	6.52 UJ	6.52 UJ
					MRS-AAPN32404265-SS2003R	2	µg/kg	9.94 UJ	1.06 UJ	4.31 UJ	4.31 UJ	4.31 UJ	6.63 UJ	6.63 UJ	4.31 UJ	4.31 UJ	6.63 UJ	4.31 UJ	2.65 UJ	6.63 UJ	4.89 J	6.63 UJ	6.63 UJ

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
22	32405267*	4000	E. Thompson Ave	2/19/2020	MRS-APN32405267-SS001R	0	µg/kg	2.68 J	2.08 J	5.02 J	33.8	49.2	62.4	37.7	22.8	50.7	8.90 J	60.4	1.06 J	38.1	4.02 J	23.6	63.1
					MRS-APN32405267-SS002R	0	µg/kg	1.62 J	0.729 J	2.92 J	19.5	27.7	41.7	22.1	14.1	28.6	5.24 J	39.5	2.49 U	22.0	2.76 J	15.8	36.9
					MRS-APN32405267-SS003R	0	µg/kg	2.41 J	3.92 U	15.9 U	18.7 J	25.8 J	38.7	21.9 J	11.5 J	28.9 J	24.5 U	43.2	9.79 U	21.4 J	3.95 J	17.3 J	40.5
					MRS-APN32405267-SS1001R	1	µg/kg	0.677 J	0.407 J	3.80 J	18.3 J	21.7 J	30.9 J	14.9 J	11.4 J	22.0 J	4.08 J	39.3	2.56 U	16.4 J	1.39 J	19.1 J	33.2 J
					MRS-APN32405267-SS1002R	1	µg/kg	0.749 J	0.405 J	3.85 U	10.3	15.9	22.0	12.0	8.67 J	14.4	3.91 J	18.0	2.37 U	13.7	1.66 J	6.68 J	17.6
					MRS-APN324054267-SS1003R	1	µg/kg	1.19 J	0.371 J	4.09 U	5.92 J	8.99 J	13.3	6.56 J	5.09 J	10.0	6.29 U	14.0	2.52 U	7.71 J	2.23 J	5.11 J	13.9
					MRS-APN32405267-SS2001R	2	µg/kg	1.80 J	1.03 U	4.17 U	4.17 U	4.17 U	6.42 U	6.42 U	4.17 U	4.17 U	6.42 U	4.17 U	2.57 U	6.42 U	1.37 J	6.42 U	6.42 U
					MRS-APN324054267-SS2002R	2	µg/kg	0.824 J	1.04 U	4.24 U	4.24 U	4.24 U	6.52 U	6.52 U	4.24 U	4.24 U	6.52 U	4.24 U	2.61 U	6.52 U	2.21 J	6.52 U	6.52 U
					MRS-APN32405267-SS2003R	2	µg/kg	1.83 UJ	0.974 UJ	3.96 UJ	3.96 UJ	3.96 UJ	6.09 UJ	6.09 UJ	3.96 UJ	3.96 UJ	6.09 UJ	3.96 UJ	2.43 UJ	6.09 UJ	1.29 J	6.09 UJ	6.09 UJ
23	32427024	3860	E. Snavely Ave.	4/7/2021	MRS-APN32427024-SS001	0	µg/kg	1.97 UJ	1.05 UJ	4.27 UJ	2.37 J	2.64 J	3.59 J	2.24 J	4.27 UJ	3.15 J	6.57 UJ	4.08 J	2.63 UJ	6.57 UJ	1.97 UJ	6.57 UJ	3.93 J
					MRS-APN32427024-SS002	0	µg/kg	1.96 UJ	1.05 UJ	4.25 UJ	4.33 J	4.96 J	6.42 J	3.46 J	2.53 J	6.26 J	6.54 UJ	7.82 J	2.62 UJ	3.44 J	1.96 UJ	3.43 J	7.47 J
					MRS-APN32427024-SS003	0	µg/kg	2.00 UJ	1.07 UJ	4.33 UJ	2.28 J	2.40 J	3.26 J	2.71 J	2.33 J	3.24 J	6.66 UJ	2.88 J	2.66 UJ	6.66 UJ	2.00 UJ	6.66 UJ	2.81 J
					MRS-APN32427024-SS1001	1	µg/kg	1.92 UJ	1.02 UJ	4.15 UJ	2.08 J	2.39 J	2.79 J	6.39 UJ	4.15 UJ	2.68 J	6.39 UJ	4.10 J	2.56 UJ	6.39 UJ	1.92 UJ	2.17 J	4.32 J
					MRS-APN32427024-SS1002	1	µg/kg	2.00 UJ	1.07 UJ	4.33 UJ	3.01 J	3.44 J	4.30 J	2.43 J	4.33 UJ	4.35 J	6.66 UJ	4.34 J	2.67 UJ	2.35 J	2.00 UJ	6.66 UJ	4.65 J
					MRS-APN32427024-SS1003	1	µg/kg	1.97 UJ	1.05 UJ	4.28 UJ	4.28 UJ	4.28 UJ	6.58 UJ	6.58 UJ	4.28 UJ	4.28 UJ	6.58 UJ	2.04 J	2.63 UJ	6.58 UJ	1.97 UJ	6.58 UJ	6.58 UJ
					MRS-APN32427024-SS2001	2	µg/kg	1.83 UJ	0.975 UJ	3.96 UJ	3.96 UJ	3.96 UJ	6.09 UJ	6.09 UJ	3.96 UJ	3.96 UJ	6.09 UJ	3.96 UJ	2.44 UJ	6.09 UJ	1.83 UJ	6.09 UJ	6.09 UJ
					MRS-APN32427024-SS2002	2	µg/kg	1.97 UJ	1.05 UJ	4.27 UJ	5.07 J	3.78 J	5.15 J	3.40 J	4.12 J	7.50 J	2.92 J	3.21 J	2.63 UJ	3.85 J	0.645 J	6.57 UJ	3.57 J
					MRS-APN32427024-SS2003	2	µg/kg	1.97 UJ	1.05 UJ	4.26 UJ	4.26 UJ	4.26 UJ	6.56 UJ	6.56 UJ	4.26 UJ	4.26 UJ	6.56 UJ	4.26 UJ	2.62 UJ	6.56 UJ	1.97 UJ	6.56 UJ	6.56 UJ
24	32436017	3966	E. Lass Ave.	2/2/2021	MRS-APN32436017-SS001	0	µg/kg	127 J	484 J	2440	**11300**	**11800**	**15800**	7430	5830	13200	**2040**	22800	245 J	**9170**	450 J	12300	20100
					MRS-APN32436017-SS002	0	µg/kg	88.7	319	1880	**9760**	**10300**	**13700**	6760	5230	11300	**1780**	19600	154	**8190**	252	10100	17200
					MRS-APN32436017-SS003	0	µg/kg	103	324 J	1660	**7410**	**7590**	**9980**	5070	4010	8880	1100	15300	214	**6030**	317	8730	13400
					MRS-APN32436017-SS1001	1	µg/kg	13.0	66.1	806 J	**3060**	**2850**	**4050**	1880	1510	3550	**273**	6850	76.6	**2280**	31.1	4200	5720
					MRS-APN32436017-SS1002	1	µg/kg	55.5	201	1140	**5970**	**6310**	**8650**	4550	3370	7430	**937 J**	12400	89.1	**5330**	157	6670	11000
					MRS-APN32436017-SS1003	1	µg/kg	34.1	128	994	**4550**	**4490**	**6180**	3070	2470	5550	**654 J**	10000	66.3	**3660**	92.7	5620	8630
					MRS-APN32436017-SS2001	2	µg/kg	33.3	104	538	**2310**	**2240**	**2940**	1370	1200	2860	**351 J**	4950	64.9	**1690**	112	2900	4320
					MRS-APN32436017-SS2002	2	µg/kg	3.01 J	8.56 J	57.2	323	**298**	798	200	172	736	53.4	1260	4.69 J	222	7.38 J	300	1110
					MRS-APN32436017-SS2003	2	µg/kg	2.81 J	8.44 J	54.5	238	**210**	306	143	119	261	38.5	556	10.3	154	7.46 J	260	491
				3/3/1/2021	MRS-APN32436017-SS3001	3	µg/kg	0.0253 J	0.0868 J	0.593	3.04	3.17	3.50	1.95	1.41	3.23	0.555	5.40	0.0548 J	2.25	0.0803 J	2.75	4.74
					MRS-APN32436017-SS3002	3	µg/kg	1.97 U	3.06 J	31.8	164	**157**	200	95.9	68.9	166	27.8	314	1.87 J	111	1.53 J	148	279
					MRS-APN32436017-SS3003	3	µg/kg	0.622 J	1.96 J	13.0	78.0	78.9	98.0	48.7	34.3	83.3	10.4	160	1.02 J	54.9	1.92 J	66.4	140
					MRS-APN32436017-SS4001	4	µg/kg	1.50 J	4.00 J	15.1	93.1	109	120	62.2	44.4	110	13.5	171	1.58 J	71.4	5.14 J	69.9	165
					MRS-APN32436017-SS4002	4	µg/kg	2.21 J	8.04 J	94.8	440	**404**	516	257	208	424	60.6	889	4.76 J	301	7.28 J	395	727
					MRS-APN32436017-SS4003	4	µg/kg	1.84 U	1.31 J	10.6	56.0	55.0	70.2	34.7	25.8	58.0	6.12 U	116	2.45 U	39.5	1.07 J	51.3	100
25	32436028	3951	E. Lass Ave.	2/16-17/2020	MRS03-APN32436028-SS001	0	µg/kg	0.878 J	0.967 J	3.89 J	20.9	27.3	34.4	19.9	13.8	29.8	4.74 J	37.7	2.63 U	21.5	2.0 J	24.8	37.9
					MRS03-APN32436028-SS002	0	µg/kg	1.10 J	1.15 J	3.83 J	26.0	35.2	41.9	24.7	16.7	34.0	5.88 J	46.5	2.59 U	26.4	2.18 J	24.2	47.4
					MRS03-APN32436028-SS003	0	µg/kg	4.61 J	2.41 J	5.63 J	30.9	37.4	47.5	25.3	19.2	37.8	6.32 J	59.3	2.02 J	27.8	6.64 J	36.1	57.4
					MRS03-APN32436028-SS1001	1	µg/kg	1.97 U	1.05 U	1.69 J	13.1	17.5	22.1	12.1	9.24 J	17.1	2.86 J	24.1	2.63 U	13.8	1.29 J	11.1	24.1
					MRS03-APN32436028-SS1002	1	µg/kg	0.656 J	0.746 J	4.43 J	28.8 J	37.5	47.8 J	27.5	19.5	36.7 J	6.28 J	56.7 J	2.64 U	29.6	1.65 J	28.5	53.9 J
					MRS03-APN32436028-SS1003	1	µg/kg	0.700 J	0.748 J	2.06 J	18.3	27.3	34.0	19.7	13.7	24.9	5.34 J	30.7	2.61 U	22.3	1.58 J	12.6	31.9
					MRS03-APN32436028-SS2001	2	µg/kg	1.96 U	0.707 J	2.91 J	24.6	34.7	42.2	25.7	17.9	32.9	6.05 J	41.5	2.62 U	26.9	1.34 J	18.2	42.9
					MRS03-APN32436028-SS2002	2	µg/kg	1.88 U	0.511 J	3.86 J	20.8	23.7	31.2	16.5	13.1	24.2	3.94 J	42.6	2.50 U	18.7	1.31 J	21.8	37.7
					MRS03-APN32436028-SS2003	2	µg/kg	0.796 J	0.826 J	2.65 J	26.3	37.9	46.3	26.1	19.8	37.6	6.15 J	46.1	2.59 U	29.0	2.02 J	20.3	47.2

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
26	32436030	3943	E. Lass Ave.	2/9/2021	MRS03-APN32436030-SS001	0	µg/kg	0.808 J	1.06 U	3.13 J	25.9	31.6	42.9	24.1	17.2	34.2	5.89 J	45.4	2.64 U	28.1	1.72 J	18.5	44.2
					MRS03-APN32436030-SS002	0	µg/kg	1.13 J	1.03 U	2.88 J	24.4	30.2	41.3	23.9	16.3	32.3	5.58 J	45.6	2.58 U	27.6	2.45 J	17.8	44.8
					MRS03-APN32436030-SS003	0	µg/kg	2.00 U	1.07 U	4.33 U	13.7	18.3	24.9	14.6	4.33 U	19.4	3.60 J	23.7	2.66 U	17.0	2.00 U	8.49 J	23.8
					MRS03-APN32436030-SS1001	1	µg/kg	0.693 J	1.03 U	4.18 U	5.32 J	6.92 J	9.9	5.49 J	4.03 J	7.52 J	6.44 U	9.55 J	2.57 U	6.47 J	1.29 J	3.29 J	10.2
					MRS03-APN32436030-SS1002	1	µg/kg	0.861 J	1.05 U	1.51 J	9.61 J	9.97	14.8	7.66 J	5.84 J	11.6	6.54 U	19.5	2.62 U	9.24 J	6.57 J	9.25 J	17.6
					MRS03-APN32436030-SS1003	1	µg/kg	0.904 J	1.03 U	1.44 J	14.9	19.7	27.3	14.5	10.2	21.0	3.71 J	27.5	2.58 U	17.7	1.81 J	9.81	28.4
					MRS03-APN32436030-SS2001	2	µg/kg	0.762 J	1.05 U	4.28 U	7.67 J	9.62 J	13.6	7.28 J	5.05 J	10.5	6.59 U	13.4	2.64 U	8.63 J	1.45 J	4.91 J	13.8
					MRS03-APN32436030-SS2002	2	µg/kg	1.03 J	1.06 U	4.32 U	2.53 J	3.19 J	4.70 J	2.67 J	4.32 U	3.63 J	6.64 U	4.27 J	2.66 U	2.93 J	1.82 J	6.64 U	4.56 J
					MRS03-APN32436030-SS2003	2	µg/kg	0.940 J	1.03 U	4.20 U	4.69 J	6.15 J	9.05 J	4.89 J	3.26 J	6.79 J	6.46 U	8.81 J	2.58 U	5.73 J	1.73 J	3.06 J	9.19 J
27	32437017*	3968	E. Packard Ave.	1/22/2021	MRS03-APN32437017-SS001R	0	µg/kg	2.86 J	1.05 U	4.26 U	8.03 J	10.3	14.9	10.4	5.09 J	12.4	6.55 U	12.3	2.62 U	9.37 J	4.98 J	6.43 J	12.4
					MRS03-APN32437017-SS002R	0	µg/kg	3.83 J	0.434 J	4.29 U	7.97 J	11.2	15.2	11.5	7.05 J	12.6	2.73 J	11.3	1.02 J	10.7	6.07 J	6.36 J	11.5
				1/23/2021	MRS03-APN32437017-SS003R	0	µg/kg	3.50 J	0.396 J	4.27 U	6.54 J	9.73 J	13.1	10.6	5.42 J	10.1	6.57 U	9.78 J	0.934 J	10.1	6.18 J	5.72 J	9.99
					MRS03-APN32437017-SS1001R	1	µg/kg	2.39 J	1.04 U	4.21 U	5.16 J	6.93 J	10.0	7.90 J	3.97 J	8.17 J	6.48 U	7.28 J	2.59 U	7.31 J	4.82 J	4.23 J	7.27 J
					MRS03-APN32437017-SS1002R	1	µg/kg	2.60 J	1.03 U	4.18 U	2.46 J	2.97 J	4.63 J	3.37 J	4.18 U	3.78 J	6.43 U	4.18 U	2.57 U	2.93 J	5.00 J	6.43 U	6.43 U
					MRS03-APN32437017-SS1003R	1	µg/kg	4.50 J	0.952 U	3.87 U	2.99 J	3.98 J	5.80 J	4.81 J	2.32 J	4.65 J	5.95 U	3.08 J	2.38 U	3.77 J	8.27 J	2.86 J	2.86 J
					MRS03-APN32437017-SS2001R	2	µg/kg	2.59 J	1.04 U	4.24 U	2.99 J	4.15 J	5.84 J	4.46 J	2.14 J	4.71 J	6.52 U	2.50 J	2.61 U	3.99 J	5.19 J	2.37 J	2.67 J
					MRS03-APN32437017-SS2002R	2	µg/kg	2.13 J	1.06 U	4.29 U	2.11 J	1.90 J	2.66 J	2.85 J	2.15 J	2.64 J	6.60 U	4.29 U	2.64 U	2.33 J	3.63 J	6.60 U	6.60 U
					MRS03-APN32437017-SS2003R	2	µg/kg	1.94 J	0.990 U	4.02 U	4.02 U	4.02 U	6.19 U	6.19 U	4.02 U	4.02 U	6.19 U	4.02 U	2.48 U	6.19 U	3.63 J	6.19 U	6.19 U
28	32437019	3976	E. Packard Ave.	1/12/2021	MRS03-APN32437019-SS001	0	µg/kg	1.94 UJ	1.04 UJ	4.21 UJ	10.5 J	12.1 J	17.5 J	9.97 J	7.71 J	15.2 J	6.48 UJ	17.3 J	2.59 UJ	9.92 J	2.30 J	6.84 J	17.5 J
					MRS03-APN32437019-SS002	0	µg/kg	1.87 X	0.427 J	1.45 J	13.9 J	15.1 J	21.7 J	12.3 J	9.49 J	20.3 J	2.90 J	24.8 J	2.50 X	12.3 J	1.87 X	9.4 J	24.8 J
					MRS03-APN32437019-SS003	0	µg/kg	1.91 U	1.02 U	4.14 U	10.7	12.1 J	18.2 J	9.22 J	7.93 J	14.5	6.37 UJ	21.2	2.55 U	10.1 J	3.25 J	8.77 J	20.0
					MRS03-APN32437019-SS1001	1	µg/kg	1.95 U	1.04 U	4.23 U	9.23 J	9.85 J	15.4 J	8.18 J	6.98 J	13.1	6.50 UJ	18.8	2.60 U	9.03 J	2.55 J	8.20 J	17.5
					MRS03-APN32437019-SS1002	1	µg/kg	0.781 J	0.974 U	3.95 U	2.84 J	3.34 J	4.70 J	2.48 J	2.19 J	4.10 J	6.08 UJ	5.58 J	2.43 U	2.78 J	3.20 J	2.18 J	5.42 J
					MRS03-APN32437019-SS1003	1	µg/kg	1.17 J	1.02 U	4.13 U	4.04 J	3.92 J	6.05 J	3.11 J	2.95 J	5.59 J	6.35 UJ	8.25 J	2.54 U	3.40 J	4.63 J	3.75 J	7.37 J
					MRS03-APN32437019-SS2001	2	µg/kg	0.870 J	1.02 U	4.14 U	4.14 U	4.14 UJ	6.37 UJ	6.37 UJ	4.14 UJ	4.14 U	6.37 UJ	4.14 U	2.55 U	6.37 UJ	3.08 J	6.37 U	6.37 U
					MRS03-APN32437019-SS2002	2	µg/kg	1.14 J	0.996 U	4.04 U	4.04 U	4.04 UJ	6.22 UJ	6.22 UJ	4.04 UJ	2.02 J	6.22 UJ	4.04 U	2.49 U	6.22 UJ	3.32 J	6.22 U	6.22 U
					MRS03-APN32437019-SS2003	2	µg/kg	1.88 U	1.00 U	4.07 U	8.10 J	6.74 J	11.6 J	7.01 J	5.16 J	12.3	6.26 UJ	14.0	2.51 U	6.30 J	2.48 J	3.10 J	14.0
29	32439020*	3914	E. Snavely Ave.	3/5/2020	MRS03-APN32439020-SS001R	0	µg/kg	1.96 U	9.82 U	3.52 J	27.0	37.1	49.1	29.8	18.1	32.7	7.12 J	48.8	2.62 U	33.0	9.82 U	18.3	48.7
					MRS03-APN32439020-SS002R	0	µg/kg	1.98 U	1.06 U	2.39 J	25.8	40.4	54.5	36.3	20.4	33.6	8.31 J	41.0	2.65 U	35.7	9.92 U	13.3	42.3
					MRS03-APN32439020-SS003R	0	µg/kg	1.97 U	1.05 U	4.03 J	33.4	47.1	67.1	41.5	24.0	43.0	10.1	59.0	2.63 U	41.9	9.87 U	21.4	58.9
					MRS03-APN32439020-SS1001R	1	µg/kg	1.92 U	1.02 U	4.16 U	13.1	20.6	27.5	18.5	9.85	16.9	3.38 J	21.0	2.56 U	16.8	1.92 U	6.70 J	22.6
					MRS03-APN32439020-SS1002R	1	µg/kg	1.95 U	1.04 U	4.23 U	11.7	19.8	25.9	17.1	9.42 J	15.6	3.33 J	21.8	2.61 U	16.0	9.77 U	6.90 J	22.7
					MRS03-APN32439020-SS1003R	1	µg/kg	1.88 U	1.00 U	4.07 U	11.9	20.8	25.4	17.2	9.4	16.7	4.43 J	20.6	2.51 U	18.4	1.88 U	6.73 J	21.2
					MRS03-APN32439020-SS2001R	2	µg/kg	1.94 U	1.04 U	2.86 J	11.5	12.4	17.1	10.5	6.38 J	12.6	2.65 J	26.3	2.59 U	9.67 J	1.94 U	14.7	22.3
					MRS03-APN32439020-SS2002R	2	µg/kg	1.93 U	1.03 U	4.18 U	4.18 U	1.76 J	6.43 U	6.43 U	4.18 U	4.18 U	6.43 U	4.18 U	2.57 U	6.43 U	1.93 U	6.43 U	6.43 U
					MRS03-APN32439020-SS2003R	2	µg/kg	1.89 U	1.01 U	4.10 U	2.94 J	4.80 J	3.35 J	4.16 J	2.32 J	3.50J	6.30 U	4.17 J	2.52 U	3.94 J	1.89 U	6.30 U	4.54 J

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
30	32439038	3927	E. Snavely Ave.	2/10/2021	MRS03-APN32439038-SS001	0	µg/kg	3.39 J	4.80 J	10.7	91.2	112	133	71.4	56.6	128	21.2	139	1.38 J	86.8	10.2	55.5	157
					MRS03-APN32439038-SS002	0	µg/kg	1.30 J	1.46 J	6.95 J	44.8	48.0	67.3	35.7	25.5	54.4	9.40 J	81.3	2.63 U	42.1	2.65 J	37.8	75.4
					MRS03-APN32439038-SS003	0	µg/kg	1.52 J	1.81 J	4.82 J	41.5	53.2	70.1	39.3	26.7	56.4	8.86 J	64.8	2.66 U	46.1	3.42 J	25.5	69.5
					MRS03-APN32439038-SS1001	1	µg/kg	0.765 J	0.638 J	1.59 J	15.2	18.5	25.1	13.0	9.45 J	20.7	3.13 J	25.3	2.61 U	16.1	1.59 J	9.35 J	26.4
					MRS03-APN32439038-SS1002	1	µg/kg	1.11 J	1.72 J	3.54 J	27.0	34.8	43.3	25.1	18.0	37.0	6.49 J	45.6	2.66 U	29.7	2.80 J	17.9	48.1
					MRS03-APN32439038-SS1003	1	µg/kg	1.15 J	1.03 U	4.03 J	32.0	38.3	52.4	28.4	19.2	43.1	7.37 J	57.3	2.57 U	33.6	2.70 U	24.6	57.0
					MRS03-APN32439038-SS2001	2	µg/kg	1.96 U	1.05 U	4.26 U	4.26 U	4.26 U	6.55 U	6.55 U	4.26 U	4.26 U	6.55 U	4.26 U	2.62 U	6.55 U	1.22 J	6.55 U	6.55 U
					MRS03-APN32439038-SS2002	2	µg/kg	1.89 U	1.01 U	4.10 U	4.10 U	4.10 U	6.30 U	6.30 U	4.10 U	4.10 U	6.30 U	4.10 U	2.52 U	6.30 U	1.15 J	6.30 U	6.30 U
					MRS03-APN32439038-SS2003	2	µg/kg	0.77 J	1.03 U	4.18 U	4.20 J	5.17 J	6.75 J	3.63 J	2.69 J	6.06 J	6.43 U	6.37 J	2.57 U	4.19 J	1.76 J	2.88 J	7.46 J
31	Thompson Easement (A)			10/15-16/2020	MRS03-Thomp A-SS001	0	µg/kg	1.57 J	1.69 J	5.59 J	36.2 J	44.0 J	59.9 J	31.5 J	26.4 J	52.5 J	8.04 J	68.4	2.65 U	32.7 J	3.89 J	31.5	67.1
					MRS03-Thomp A-SS002	0	µg/kg	1.72 J	1.00 J	3.48 J	28.6 J	35.1 J	48.9 J	27.2 J	19.6 J	39.4 J	6.54 J	49.7	2.61 U	28.1 J	4.03 J	18.7	48.6
					MRS03-Thomp A-SS003	0	µg/kg	2.38 J	1.92 J	4.83 J	38.7 J	45.9 J	62.3 J	34.3 J	27.3 J	55.2 J	9.03 J	63.8	2.58 U	35.3 J	4.75 J	24.2	64.7
					MRS03-Thomp A-SS1001	1	µg/kg	0.888 J	1.13 J	10.0	46.1 J	42.9 J	61.2 J	29.6 J	26.0 J	51.1 J	8.21 J	87.8	2.45 U	34.0 J	2.32 J	48.7	72.3
					MRS03-Thomp A-SS1002	1	µg/kg	0.682 J	1.04 U	1.90 J	21.3 J	27.2 J	37.2 J	20.5 J	16.3 J	27.6 J	5.07 J	31.5 J	2.60 U	22.1 J	1.71 J	11.3	30.8
					MRS03-Thomp A-SS1003	1	µg/kg	0.930 J	0.765 J	2.21 J	22.3 J	27.2 J	36.6 J	20.0 J	15.9 J	28.8 J	5.47 J	33.9	2.59 U	21.4 J	2.40 J	12.4	34.5
					MRS03-Thomp A-SS2001	2	µg/kg	1.95 U	1.04 U	4.22 U	4.22 U	4.22 U	6.49 U	6.49 U	4.22 U	4.22 U	6.49 U	4.22 U	2.60 U	6.49 U	2.11 J	6.49 U	6.49 U
					MRS03-Thomp A-SS2002	2	µg/kg	1.98 U	1.06 U	4.29 U	4.29 U	4.29 U	6.61 U	6.61 U	4.29 U	4.29 U	6.61 U	4.29 U	2.64 U	6.61 U	1.88 J	6.61 U	6.61 U
					MRS03-Thomp A-SS2003	2	µg/kg	1.95 U	1.04 U	4.22 U	4.22 U	4.22 U	6.49 U	6.49 U	4.22 U	4.22 U	6.49 U	4.22 U	2.60 U	6.49 U	1.95 U	6.49 U	6.49 U
31	Thompson Easement (B)			12/16/2020	MRS03-Thomp B-SS001	0	µg/kg	2.39 J	1.40 J	4.92 J	46.5	68.3	97.6	57.3	34.2	75.1	14.4	81.2	2.63 U	57.9	4.07 J	28.5	84.6
					MRS03-Thomp B-SS002	0	µg/kg	2.28 J	2.03 J	6.90 J	57.9	76.3	99.7	53.5	36.5	82.4	14.6	99.9	1.00 J	59.6	4.71 J	38.7	101
					MRS03-Thomp B-SS003	0	µg/kg	2.78 J	1.58 J	5.87 J	48.5	62.8	89.1	47.3	29.7	69.4	11.7	82.8	2.61 U	53.3	5.20 J	31.9	80.9
					MRS03-Thomp B-SS1001	1	µg/kg	1.12 J	1.04 U	1.95 J	23.3	32.6	44.3	23.9	16.3	31.5	5.67 J	36.3	2.59 U	28.6	2.66 J	10.8	35.9
					MRS03-Thomp B-SS1002	1	µg/kg	0.941 J	1.06 U	4.29 U	13.8	16.6	24.7	12.3	7.89 J	18.8	6.61 U	25.3	2.64 U	15.1	1.94 J	8.53 J	24.5
					MRS03-Thomp B-SS1003	1	µg/kg	1.89 U	1.01 U	4.09 U	9.51	12.4	17.3	9.40 J	6.58 J	13.6	6.29 U	15.7 J	2.52 U	11.5	1.82 J	5.20 J	16.2
					MRS03-Thomp B-SS2001	2	µg/kg	2.00 U	1.07 U	4.33 U	4.33 U	4.33 U	6.67 U	6.67 U	4.33 U	4.33 U	6.67 U	4.33 U	2.67 U	6.67 U	1.95 J	6.67 U	6.67 U
					MRS03-Thomp B-SS2002	2	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.54 J	6.57 U	6.57 U
					MRS03-Thomp B-SS2003	2	µg/kg	1.93 U	1.03 U	4.19 U	4.19 U	3.16 J	4.86 J	2.47 J	4.19 U	4.19 U	6.45 U	9.67 U	2.58 U	2.64 J	2.03 J	6.45 U	6.45 U
31	Thompson Easement (C)			12/17/2020	MRS03-Thomp C-SS001	0	µg/kg	2.48 J	1.05 U	6.56 J	60.7	70.8	93.5	53.8	41.7	84.9	18.2	93.8	2.61 U	58.1	4.01 J	36.6	96.3
					MRS03-Thomp C-SS002	0	µg/kg	3.32 J	2.54 J	4.62 J	36.9 J	46.6 J	66.9 J	35.4 J	24.4	55.2 J	8.52 J	61.5 J	1.39 J	40.7 J	5.25 J	23.9 J	61.4 J
					MRS03-Thomp C-SS003	0	µg/kg	3.23 J	3.04 J	9.20 J	59.8	69	95.8	44.6	36.5	80.9	13.3	109	2.47 U	64.1	5.88 J	50.9	100
					MRS03-Thomp C-SS1001	1	µg/kg	0.958 J	1.06 U	1.50 J	14.4	17.6	25.1	11.1	9.28 J	20.1	6.65 U	23.2	2.66 U	17.5	3.15 J	8.60 J	23.6
					MRS03-Thomp C-SS1002	1	µg/kg	2.35 J	4.22 J	6.14 J	41.1	50.9	62.3	26.9	25	58.1	8.75 J	59.1	1.43 J	34.5	7.65 J	28.6	67
				12/18/2020	MRS03-Thomp C-SS1003	1	µg/kg	1.97 U	1.05 U	1.92 J	15.9	19.3	27.5	14.9	9.68 J	21.9	6.57 U	26.4	2.63 U	15.4	1.97 U	10.1	26.8
				12/17/2020	MRS03-Thomp C-SS2001	2	µg/kg	0.930 J	1.05 U	4.25 U	4.25 U	2.17 J	3.30 J	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.62 U	6.54 U	2.12 J	6.54 U	6.54 U
					MRS03-Thomp C-SS2002	2	µg/kg	1.08 J	1.07 U	4.33 U	4.33 U	4.33 U	6.66 U	6.66 U	4.33 U	4.33 U	6.66 U	4.33 U	2.66 U	6.66 U	3.38 J	6.66 U	6.66 U
				12/18/2020	MRS03-Thomp C-SS2003	2	µg/kg	1.10 J	1.10 U	4.11 U	4.11 U	4.11 U	6.33 U	6.33 U	4.11 U	4.11 U	6.33 U	4.11 U	2.53 U	6.33 U	2.61 J	6.33 U	6.33 U

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
31	Thompson Easement (D)			1/5/2021	MRS03-Thomp D-SS001	0	µg/kg	18.6 U	9.92 U	40.3 U	52.3 J	58.6 J	85.9 J	46.6 J	26.9 J	74.9 J	62.0 U	88.5 J	24.8 U	48.0 J	11.5 J	37.7 J	93.6
					MRS03-Thomp D-SS002	0	µg/kg	19.7 U	10.5 U	42.8 U	59.8 J	70.2 J	91.5 J	51.2 J	35.7 J	87.2 J	65.8 U	99.2	26.3 U	50.7 J	19.7 U	37.0 J	108
					MRS03-Thomp D-SS003	0	µg/kg	19.9 U	10.6 U	43.1 U	56.6 J	65.8 J	85.4 J	49.8 J	33.5 J	79.6 J	66.3 U	97.8 J	26.5 U	46.4 J	19.9 U	39.2 J	103
					MRS03-Thomp D-SS1001	1	µg/kg	1.82 J	1.05 U	4.25 U	15.4 J	19.0 J	24.1 J	14.1 J	10.0 J	21.3 J	6.53 U	25.9 J	2.61 U	15.3 J	5.68 J	9.46 J	27.7 J
					MRS03-Thomp D-SS1002	1	µg/kg	1.64 J	1.04 UJ	3.07 J	18.5 J	20.5 J	29.0 J	16.0 J	10.5 J	23.6 J	3.72 J	36.7 J	2.60 UJ	16.0 J	5.08 J	16.1 J	34.1 J
					MRS03-Thomp D-SS1003	1	µg/kg	1.53 J	1.51 J	3.54 J	26.0 J	31.6 J	41.6 J	22.5 J	16.3 J	35.0 J	5.28 J	47.1 J	2.42 UJ	25.2 J	4.93 J	19.7 J	46.7 J
					MRS03-Thomp D-SS2001	2	µg/kg	1.81 J	0.948 UJ	3.85 UJ	3.85 UJ	3.85 UJ	5.92 UJ	5.92 UJ	3.85 UJ	3.85 UJ	5.92 UJ	3.85 UJ	2.37 UJ	5.92 UJ	6.23 J	5.92 UJ	5.92 UJ
					MRS03-Thomp D-SS2002	2	µg/kg	1.83 J	0.977 U	3.97 U	3.97 U	3.97 U	6.11 U	6.11 U	3.97 U	3.97 U	6.11 U	3.97 U	2.44 U	6.11 U	6.58 J	6.11 U	6.11 U
					MRS03-Thomp D-SS2003	2	µg/kg	1.51 J	1.03 UJ	4.17 UJ	4.17 UJ	4.17 UJ	6.41 UJ	2.88 J	4.17 UJ	4.17 UJ	6.41 UJ	4.17 UJ	2.57 UJ	2.18 J	5.34 J	6.41 UJ	6.41 UJ
31	Thompson Easement (E)			1/14/2021	MRS03-Thomp E-SS001	0	µg/kg	19.8 U	10.6 U	24.5 J	170	**199**	276	133	108	207	65.9 U	268	26.4 U	158	7.40 J	116	252
					MRS03-Thomp E-SS002	0	µg/kg	19.9 U	10.6 U	16.8 J	139 J	**163 J**	232 J	122 J	93.5 J	186 J	66.5 U	239 J	26.6 U	129 J	19.9 U	88.1 J	231 J
					MRS03-Thomp E-SS003	0	µg/kg	19.8 U	10.6 U	42.9 U	335	**396**	479	234	211	454	60.2 J	531	26.4 U	254	12.3 J	195	574
					MRS03-Thomp E-SS1001	1	µg/kg	19.9 U	10.6 U	14.9 J	105	**129**	159	86.8 J	62.4 J	140	66.4 U	156	26.5 U	99.1 J	13.5 J	66.7 J	171
					MRS03-Thomp E-SS1002	1	µg/kg	19.8 U	10.6 U	43.0 U	71.4 J	80.2 J	111	58.3 J	39.3 J	96.1 J	66.1 U	125	26.4 U	61.5 J	19.8 U	51.7 J	124
				1/15/2021	MRS03-Thomp E-SS1003	1	µg/kg	19.7 U	10.5 U	42.7 U	92.5 J	110	143	79.2 J	57.7 J	129	65.7 U	145	26.3 U	82.9 J	19.7 U	52.4 J	154
				1/14/2021	MRS03-Thomp E-SS2001	2	µg/kg	1.99 UJ	1.06 UJ	4.30 UJ	1.86 J	1.84 J	3.46 J	6.62 UJ	4.30 UJ	2.73 J	6.62 UJ	2.80 J	2.65 UJ	6.62 UJ	1.99 UJ	6.62 UJ	2.72 J
					MRS03-Thomp E-SS2002	2	µg/kg	1.97 UJ	1.05 UJ	4.28 UJ	1.97 J	1.80 J	2.66 J	6.58 UJ	4.28 UJ	2.51 J	6.58 UJ	3.37 J	2.63 UJ	6.58 UJ	1.97 UJ	6.58 UJ	3.15 J
				1/15/2021	MRS03-Thomp E-SS2003	2	µg/kg	1.98 UJ	1.06 UJ	4.29 UJ	4.29 UJ	4.29 UJ	6.60 UJ	6.60 UJ	4.29 UJ	2.17 J	6.60 UJ	4.29 UJ	2.64 UJ	6.60 UJ	0.956 J	6.60 UJ	6.60 UJ
31	Thompson Easement (F)			1/21/2021	MRS03-Thomp F-SS001	0	µg/kg	6.39 J	12.3 J	32.0 J	267 J	**322 J**	430 J	230 J	183 J	330 J	68.8 J	382 J	4.94 J	286 J	13.6	149 J	387 J
					MRS03-Thomp F-SS002	0	µg/kg	3.80 J	9.12 J	31.9	266	**278 J**	406 J	208	179	294 J	65.2	370 J	3.72 J	266	9.48 U	151	362 J
					MRS03-Thomp F-SS003	0	µg/kg	5.68 J	11.4	31.9	271	**328 J**	468 J	204	175	336 J	62.6	390 J	4.89 J	260	12.4	153	386 J
					MRS03-Thomp F-SS1001	1	µg/kg	3.08 J	4.15 J	12.1	109	**139**	188	83.2	68.3	140	25.7	163	1.57 J	103	9.58 U	59.6	169
					MRS03-Thomp F-SS1002	1	µg/kg	3.73 J	4.34 J	14.0	111	**139**	185	83.3	73.5	134	25.3	166	1.69 J	105	9.51 U	66.7	164
					MRS03-Thomp F-SS1003	1	µg/kg	4.53 J	4.62 J	11.3	90.8	113	148	65.4	56.8	118	20.0	140	1.77 J	81.5	9.84 U	54.8	146
					MRS03-Thomp F-SS2001	2	µg/kg	3.48 J	1.03 U	4.17 U	7.19 J	8.78 J	12.3	5.45 J	5.29 J	8.95 J	6.41 U	9.87	2.57 U	6.60 J	9.62 U	3.90 J	9.88
					MRS03-Thomp F-SS2002	2	µg/kg	3.31 J	1.04 U	4.21 U	5.52 J	6.79 J	9.59 J	4.08 J	3.76 J	6.90 J	6.48 U	8.08 J	2.59 U	5.09 J	9.72 U	3.23 J	8.15 J
				1/22/2021	MRS03-Thomp F-SS2003	2	µg/kg	3.41 J	0.995 UJ	4.04 UJ	2.31 J	2.81 J	4.15 J	6.22 UJ	4.04 UJ	3.09 J	6.22 UJ	3.17 J	2.49 UJ	2.36 J	9.32 UJ	6.22 UJ	3.30 J
31	Thompson Easement (G)			2/11/2021	MRS03-Thomp G-SS001	0	µg/kg	8.63 J	26.4	104	756	**945**	**1230**	607	416	937	**163**	1330	13 J	627	23.8 J	499	1290
					MRS03-Thomp G-SS002	0	µg/kg	7.42 J	23.2	100	746	**816**	1100	596	418	902	**167**	1290	8.85 J	541	19.1 J	468	1220
					MRS03-Thomp G-SS003	0	µg/kg	8.81 J	27.9	80.4	685	**852**	1130	587	419	924	**163**	1130	10.6 J	710	22.3 J	422	1200
					MRS03-Thomp G-SS1001	1	µg/kg	4.30 J	11.6	36.8	264	**325**	412	216	145	318	56.8	432	4.22 J	247	11.4 J	171	437
					MRS03-Thomp G-SS1002	1	µg/kg	3.59 J	8.53 J	24.1 J	199	**241**	320	176	122	253	44.7	321	9.82 U	208	36.8 U	133	332
				2/12/2021	MRS03-Thomp G-SS1003	1	µg/kg	6.47 J	21.1 J	75.0	432	**497**	620	321	240	522	88.1	720	13.1 J	385	36.5 U	341	718
				2/11/2021	MRS03-Thomp G-SS2001	2	µg/kg	7.98 U	4.26 U	6.13 J	37 J	57.6	96.1	65.8	38.8 J	46.2	13.9 J	46.0	10.6 U	66.0	7.98 U	18.7 J	46.4
					MRS03-Thomp G-SS2002	2	µg/kg	7.79 U	4.19 U	16.9 U	16.9 U	7.22 J	10.9 J	26 U	16.9 U	8.14 J	26 U	10.1 J	10.4 U	26 U	7.79 U	26 U	10 J
				2/12/2003	MRS03-Thomp G-SS2003	2	µg/kg	7.97 U	4.25 U	17.3 U	17.3 U	5.98 J	26.6 U	26.6 U	17.3 U	17.3 U	26.6 U	8.98 J	10.6 U	26.6 U	7.97 U	26.6 U	9.02 J

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
31	Thompson Easement (H)			2/25/2021	MRS03-Thomp H-SS001	0	µg/kg	10.0 J	42.1 J	93.9 J	844	**1010**	**1280**	657	526	1090	**142**	1290	12.7 J	785	26.5 J	492	1320
					MRS03-Thomp H-SS002	0	µg/kg	12.9 J	51.3 J	138 J	1080 J	**1200**	**1640**	849	636 J	1350 J	**190**	1600 J	15.7 J	1010	35.3 J	686 J	1670 J
					MRS03-Thomp H-SS003	0	µg/kg	20.9 J	106	251	1040	**2100**	**2460**	1180	1050	2190	**301**	2600	34.4 J	**1500**	43.1 J	1120	2720
					MRS03-Thomp H-SS1001	1	µg/kg	5.13 J	22.6	71.2	548	**629**	815	433	320	672	101	882	6.59 J	526	13.9	346	870
					MRS03-Thomp H-SS1002	1	µg/kg	5.92 J	22.2	93.4	593	**688**	866	468	342	688	110	967	10.0	562	19.9	412	911
				2/26/2021	MRS03-Thomp H-SS1003	1	µg/kg	3.61 J	13.7	41.0	390	**473**	611	289	262	485	72.7	607	3.90 J	415	9.30 J	210	603
				2/25/2021	MRS03-Thomp H-SS2001	2	µg/kg	1.91 U	1.02 U	1.95 J	13.2	14.4	19.9	9.07 J	7.43 J	14.8	6.37 U	21.8	2.55 U	11.4	1.91 U	9.31 J	19.3
					MRS03-Thomp H-SS2002	2	µg/kg	1.93 U	1.03 U	4.18 U	5.54 J	6.65 J	8.89 J	3.98 J	3.44 J	6.80 J	6.43 U	7.28 J	2.57 U	5.04 J	1.93 U	2.57 J	7.65 J
				2/26/2021	MRS03-Thomp H-SS2003	2	µg/kg	1.99 U	1.06 U	4.31 U	3.42 J	3.84 J	6.21 J	2.72 J	2.09 J	4.52 J	6.63 U	5.38 J	2.65 U	3.40 J	1.99 U	2.31 J	5.17 J
31	Thompson Easement (I)			2/18/2021	MRS03-Thomp I-SS001	0	µg/kg	35.2 J	140 J	673	**3630**	**4730**	**5670**	2820	2190	4360	**720**	6030	66.2 J	**3250**	95.7 J	3100	5610
					MRS03-Thomp I-SS002	0	µg/kg	28.0 J	99.8 J	358 J	**2320**	**3070**	**3670**	1830	1440	2790	**475**	3850	37.5 J	**2150**	109 J	1740	3720
					MRS03-Thomp I-SS003	0	µg/kg	39.5 J	160 J	507	**3330**	**4200**	**4880**	2300	1960	4100	**628**	5800	55.1 J	**2750**	120 J	2540	5860
					MRS03-Thomp I-SS1001	1	µg/kg	35.7 J	102 J	256 J	**1860**	**2490**	**2880**	1400	1150	2340	**380 J**	2830	106 U	**1690**	108 J	1350	2960
				2/19/2021	MRS03-Thomp I-SS1002	1	µg/kg	23.0 J	69.6 J	242	**1610**	**2160**	2530	1270	990	1970	**332**	2730	21.7 J	**1480**	74.0 J	1230	2610
					MRS03-Thomp I-SS1003	1	µg/kg	13.7 J	51.7 J	231	**1550**	**1960**	**2380**	1150	903	1750	**302**	2540	20.1 J	**1360**	43.7 J	1060	2500
				2/18/2021	MRS03-Thomp I-SS2001	2	µg/kg	1.98 U	0.712 J	2.53 J	21.5	29.8	37.1	19.9	14.5	27.0	5.01 J	35.2	2.64 U	22.4	1.98 U	13.6	34.7
				2/19/2021	MRS03-Thomp I-SS2002	2	µg/kg	1.93 U	0.517 J	1.39 J	13.7	18.6	22.6	12.0	9.30 J	17.8	3.12 J	21.2	2.57 U	13.6	1.93 U	8.24 J	22.3
					MRS03-Thomp I-SS2003	2	µg/kg	1.91 U	1.21 J	2.61 J	27.6	36.3	40.3	20.2	17.3	37.1	5.56 J	45.0	2.55 U	24.2	1.91 U	17.6	50.2
31	Thompson Easement (J)			1/7/2021	MRS03-Thomp J-SS001	0	µg/kg	67.5 J	280 J	884 J	**7270**	**8700**	**11500**	5470	4520	8540	**1530**	12100	116 J	**6740**	167 J	4670	12200
					MRS03-Thomp J-SS002	0	µg/kg	65.1	284	978	**5670**	**6700**	**8820**	4210	3450	6770	**1160**	10100	138	**4690**	166	4000	9850
					MRS03-Thomp J-SS003	0	µg/kg	120	409	1040	**6620**	**7800**	**10200**	4920	4150	7840	**1370**	11800	185	**5640**	338	4760	11600
					MRS03-Thomp J-SS1001	1	µg/kg	110	455	1380	**8700**	**9680**	**12900**	5890	5180	10800	**1640**	14900	247	**6410**	274	6280	14100
					MRS03-Thomp J-SS1002	1	µg/kg	106	387	1160	**8590**	**9410**	**12600**	6150	4860	10700	**1710**	12800	155	**6650**	310	5370	12900
				1/8/2021	MRS03-Thomp J-SS1003	1	µg/kg	83.2	264	778	**3800**	5020	6160	3450	2690	5060	**849**	6500	145	**4060**	323	2810	6520
				1/7/2021	MRS03-Thomp J-SS2001	2	µg/kg	1.98 J	3.28 J	11.7 J	108 J	**126 J**	171 J	84.3 J	74.3 J	134 J	25.0 J	171 J	1.57 J	98.7 J	5.24 J	61.5 J	171 J
					MRS03-Thomp J-SS2002	2	µg/kg	3.91 J	8.18 J	16.5	94.3	108	127	64.5	58.1	121	19.2	144	3.24 J	72.1	10.6	77.9	152
				1/8/2021	MRS03-Thomp J-SS2003	2	µg/kg	0.946 J	0.609 J	3.22 J	25.7 J	30.2 J	42.1 J	21.5 J	17.2 J	30.8 J	5.74 J	39.9 J	2.61 UJ	25.0 J	2.14 J	16.7 J	36.6 J
				3/2/2021	MRS03-Thomp J-SS3001	3	µg/kg	1.17 J	3.41 J	12.7	110	**148**	177	92.7	68.8	128	24.0	183	1.59 J	104	3.52 J	66.5	172
					MRS03-Thomp J-SS3002	3	µg/kg	1.98 UJ	1.56 J	4.90 J	49.8 J	68.8 J	82.9 J	45.2 J	33.1 J	58.7 J	11.5	80.4 J	2.64 U	56.2 J	1.33 J	27.8 J	74.1 J
					MRS03-Thomp J-SS3003	3	µg/kg	18.2 U	15.4 J	27.8 J	225	**303**	352	186	151	300	50.1 J	363	24.3 U	239	18.8 J	153	383
					MRS03-Thomp J-SS4001	4	µg/kg	0.987 J	2.59 J	5.68 J	57.1	78.3	86.7	45.8	35.4	71.0	12.2	86.3	0.915 J	52.4	2.54 J	32.3	90.2
					MRS03-Thomp J-SS4002	4	µg/kg	0.925 J	3.18 J	10.1	67.0	92.3	103	54.4	43.0	80.7	13.2	125	2.40 J	65.8	2.83 J	53.6	117
					MRS03-Thomp J-SS4003	4	µg/kg	17.6	79.1	128	759	**1040**	941	430	455	1030	148	1160	37.1	531	47.5	630	1460
				4/1/2021	MRS03-Thomp J-SS5001	5	µg/kg	1.52 J	2.14 J	7.03 J	59.9	79.2	90.9	46.8	38.4	64.8	13.7	77.7	0.946 J	61.7	2.07 J	29.5	79.0
					MRS03-Thomp J-SS5002	5	µg/kg	2.47 J	8.73 J	22.4	190	**240**	257	125	109	209	38.1	251	3.27 J	154	6.98 J	99.5	259
				4/2/2021	MRS03-Thomp J-SS5003	5	µg/kg	1.27 J	3.66 J	16.0	125	**159**	180	91.7	76.9	134	26.4	158	1.82 J	112	2.95 J	71.2	149
				4/1/2021	MRS03-Thomp J-SS6001	6	µg/kg	0.634 J	2.15 J	12.8	76.2	86.6	101	49.4	40.3	78.2	13.8	116	1.28 J	64.6	1.75 J	53.6	104
					MRS03-Thomp J-SS6002	6	µg/kg	0.858 J	3.53 J	14.6	96.2	**122**	136	65.5	58.5	90.4	20.4	113	2.17 J	83.7	2.51 J	57.6	104
				4/2/2021	MRS03-Thomp J-SS6003	6	µg/kg	1.03 J	3.14 J	30.7	146	**150**	187	88.1	75.0	140	24.7	236	1.64 J	116	2.13 J	149	196

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
31	Thompson Easement (K)			1/6/2021	MRS03-Thomp K-SS001	0	µg/kg	85.5 J	266 J	899 J	**7070**	**8010**	**10600**	4930	4240	7970	**1390**	13100	113 J	**5680**	250 J	5150	11900
					MRS03-Thomp K-SS002	0	µg/kg	81.9 J	290 J	1530	**9420**	**9970**	**13300**	5890	5370	10200	**1720**	16500	130 J	**6750**	212 J	7280	15000
					MRS03-Thomp K-SS003	0	µg/kg	90.8	293	956	**8740**	**9940**	**12900**	5930	5350	9770	**1730**	14700	114	**6820**	249	5570	13700
				1/7/2021	MRS03-Thomp K-SS1001	1	µg/kg	236 J	804 J	2300	**15000**	**17300**	**21600**	9810	8920	16800	**2920**	24500	347 J	**11400**	700 J	9590	24200
					MRS03-Thomp K-SS1002	1	µg/kg	171 J	642 J	2150	**13900**	**15600**	**19600**	8990	8100	15300	**2640**	23000	311 J	**10300**	490 J	9350	22300
					MRS03-Thomp K-SS1003	1	µg/kg	70.3 J	268 J	755 J	**5700 J**	**6870 J**	**8690 J**	4140 J	3560 J	6780 J	**1190**	9690 J	91.0 J	**4740 J**	183 J	3800 J	9650 J
					MRS03-Thomp K-SS2001	2	µg/kg	2.57 J	7.53 J	21.9 J	161 J	**191 J**	235 J	115 J	92.0 J	192 J	33.9 J	247 J	3.10 J	132 J	6.91 J	112 J	248 J
					MRS03-Thomp K-SS2002	2	µg/kg	2.23 J	8.55 J	43.9 J	319	**360**	499	241 J	197 J	392	67.6 J	511	4.99 J	272 J	5.53 J	214 J	484
					MRS03-Thomp K-SS2003	2	µg/kg	2.98 J	3.52 J	15.0 J	150 J	**168 J**	224 J	110 J	86.5 J	162 J	31.0 J	206 J	1.44 J	125 J	8.03 J	81.2 J	196 J
				2/16/2021	MRS03-Thomp K-SS3001	3	µg/kg	3.73 J	15.0	102	513	**574**	690	341	265	538	85.6	906	7.20 J	405	13	481	816
					MRS03-Thomp K-SS3002	3	µg/kg	5.21 J	20.4	104	569	**669**	775	399	301	605	105	893	11.7	459	16.2	480	834
				2/17/2021	MRS03-Thomp K-SS3003	3	µg/kg	1.87 J	5.03 J	17.2	125	**166**	198	104	75.6	152	27.8	195	1.98 J	122	5.36 J	90.7	196
				2/16/2021	MRS03-Thomp K-SS4001	4	µg/kg	6.10 J	22.3	42.8	205	**270**	293	154	113	262	42.4	318	9.06 J	178	17.5	200	350
					MRS03-Thomp K-SS4002	4	µg/kg	1.53 J	4.84 J	12.5	75.4	95.7	107	56.7	43.3	98.4	15.2	121	1.68 J	65.7	4.37 J	59.9	128
				2/17/2020	MRS03-Thomp K-SS4003	4	µg/kg	0.975 J	2.32 J	7.37 J	67.9	82.2	98.7	49.7	39.0	78.4	13.2	92.7	2.63 U	58.4	2.91 J	37.7	91.5
				3/11/2021	MRS03-Thomp K-SS5001	5	µg/kg	1.95 U	1.04 U	8.58 J	54.2	67.5	79.7	40.7	34.8	67.6	9.94	98.9	2.60 U	48.0	3.70 J	43.7	96.1
					MRS03-Thomp K-SS5002	5	µg/kg	1.95 U	1.04 U	7.32 J	66.0	87.5	97.8	51.0	41.9	82.0	12.2	103	2.60 U	62.2	2.09 J	38.8	105
					MRS03-Thomp K-SS5003	5	µg/kg	1.97 U	1.05 U	4.70 J	37.9 J	51.7 J	55.1 J	27.7 J	22.7 J	47.6 J	7.24 J	57.4	2.62 U	34.1 J	2.38 J	20.7 J	62.3 J
					MRS03-Thomp K-SS6001	6	µg/kg	1.68 J	3.95 J	10.8	75.1	94.8	109	56.0	44.6	90.6	14.9	128	1.58 J	66.8	5.25 J	54.2	126
					MRS03-Thomp K-SS6002	6	µg/kg	3.75 J	10.3	18.8	132	**171**	179	90.1	76.1	168	28.3	207	3.34 J	114	9.47 J	88.2	224
					MRS03-Thomp K-SS6003	6	µg/kg	1.96 U	1.04 U	2.99 J	22.9	29.0	33.0	16.3	13.9	28.7	3.98 J	36.8	2.61 U	20.6	3.85 J	14.6	37.9
31	Thompson Easement (L)			1/6/2021	MRS03-Thomp L-SS001	0	µg/kg	230	1000	4690	**24500**	**27000**	**34200**	16200	**12300**	29500	**4600**	46800	566	**18100**	661	22000	44400
					MRS03-Thomp L-SS002	0	µg/kg	246	899	2510	**19200**	**21600**	**27500**	13300	9900	24100	**3540 J**	33600	393	**15700**	783	15300	33600
					MRS03-Thomp L-SS003	0	µg/kg	194	706	2010	**11100**	**12500**	**15900**	7760	5690	14100	**2410**	20500	344	**8570**	597	9360	19900
					MRS03-Thomp L-SS1001	1	µg/kg	437 J	1330 J	4440	**24200**	**25700**	**32100**	15300	**12600**	30500	**4360**	43700	679 J	**18100**	1140 J	21400	41500
					MRS03-Thomp L-SS1002	1	µg/kg	494 J	1750 J	5980	**31400**	**33600**	**43200**	19300	**15000**	38300	**5690**	59700	855 J	**21500**	1750 J	29000	56900
					MRS03-Thomp L-SS1003	1	µg/kg	772 U	945 J	3230 J	**18100**	**19400**	**25000**	11700	8880	22500	**3050 J**	33000	431 J	**13000**	821 J	16000	31400
					MRS03-Thomp L-SS2001	2	µg/kg	17.1 J	89.2 J	242 J	**1890 J**	**1890 J**	**2330 J**	1120 J	890 J	2390 J	2520 U	3330 J	31.9 J	**1230 J**	38.9 J	1640 J	3460 J
					MRS03-Thomp L-SS2002	2	µg/kg	14.3	51.7	216	1110	**1180**	**1500**	711	517	1360	**225**	2090	21.7	775	44.1	1020	2010
					MRS03-Thomp L-SS2003	2	µg/kg	15.6	44.8	142	767	**835**	1090	539	392	988	**176**	1390	15.9	577	46.1	655	1380
				3/4/2021	MRS03-Thomp L-SS3001	3	µg/kg	18.1 J	79.0 J	249	**1820**	**2290**	**2710**	1360	1110	1930	**434**	2300	52.5 J	**1760**	55.6 J	1090	2240
					MRS03-Thomp L-SS3002	3	µg/kg	15.5 J	33.9 J	77.4 J	476	**588**	757	469	345	766	**128**	893	12.2 J	546	55.4 J	458	887
				3/52021	MRS03-Thomp L-SS3003	3	µg/kg	19.0 U	13.0 J	23.5 J	180	**223**	298	171	144	318	44.1 J	346	25.3 U	187	12.4 J	167	368
				3/4/2021	MRS03-Thomp L-SS4001	4	µg/kg	18.5 U	3.45 J	40.1 U	76.5 J	85.2 J	129	75.5 J	58.7 J	134	61.7 U	146	24.7 U	74.6 J	18.5 U	72.6 J	141
					MRS03-Thomp L-SS4002	4	µg/kg	1.78 J	6.20 J	14.3	135	**196**	220	130	89.6	170	32.4	230	2.46 J	139	5.23 J	86.4	231
				3/52021	MRS03-Thomp L-SS4003	4	µg/kg	0.877 J	2.44 J	7.81 J	75.1	103	126	69.5	49.3	94.6	16.1	130	1.04 J	72.4	2.72 J	47.2	121
				4/1/2021	MRS03-Thomp L-SS5001	5	µg/kg	5.84 J	24.3	82.4	711	**947**	1030	564	434	690	**133**	901	11.0	769	19.7	358	935
					MRS03-Thomp L-SS5002	5	µg/kg	3.75 J	12.6	37.5	313	**430**	459	249	176	307	58.3	471	5.39 J	324	12.0	171	492
				4/2/2021	MRS03-Thomp L-SS5003	5	µg/kg	9.88	36.5	111	892	**1240**	**1280**	675	535	885	172	1220	18.8	935	31.6	521	1280
				4/1/2021	MRS03-Thomp L-SS6001	6	µg/kg	1.24 J	4.91 J	26.3 J	180 J	**253 J**	284 J	149 J	99.7 J	189 J	37.1 J	291 J	2.52 J	205 J	3.34 J	126 J	276 J
					MRS03-Thomp L-SS6002	6	µg/kg	1.78 J	5.47 J	21.5	154	**213**	244	124	84.1	162	32.7	236	2.31 J	172	6.18 J	105	232
				4/2/2021	MRS03-Thomp L-SS6003	6	µg/kg	3.86 J	13.5	36.4	238	**318**	339	176	132	260	46.2	351	5.89 J	246	12.3	160	377

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
31	Thompson Easement (M)			12/3/2020	MRS03-Thomp M-SS001	0	µg/kg	94.3	293	1140	**7130**	**9040**	**12200**	6100	5000	9070	**1560**	13600	103	**6690**	315	5710	13700
					MRS03-Thomp M-SS002	0	µg/kg	116	436 J	2080	**10100**	**11900**	**16400**	7900	6660	12300	**2050**	19900	193	**9680**	364 J	9750	18900
					MRS03-Thomp M-SS003	0	µg/kg	117 J	478 J	1660	**10700**	**13200**	**17900**	8760	7120	13300	**2340**	18800	152 J	**9960**	422 J	8220	18200
					MRS03-Thomp M-SS1001	1	µg/kg	99.1	251 J	800 J	**4830**	**5610**	**7500**	3490	3060	6090	**963 J**	7640	161	**3990**	315	3740	7570
					MRS03-Thomp M-SS1002	1	µg/kg	127	370 J	1200	**6230**	**7050**	**9400**	4430	3820	7710	**1160**	11100	216	**4940**	348 J	5600	10600
				12/4/2020	MRS03-Thomp M-SS1003	1	µg/kg	4.22 J	3.15 J	9.68	64.0	81.7	105	51.3	37.2	78.6	15.0	103	1.78 J	60.5	11.1	47.6	108
				12/3/2020	MRS03-Thomp M-SS2001	2	µg/kg	5.90 J	10.6	35.6	214	**237**	306	159	113	242	44.5	338	4.88 J	184	18.0	171	332
					MRS03-Thomp M-SS2002	2	µg/kg	10.4	22.0	38.5	236	**309**	372	204	138	285	56.0	335	11.6	234	36.9	170	343
				12/4/2020	MRS03-Thomp M-SS2003	2	µg/kg	66.3	160	345 J	**2530**	**3020**	**4000**	1860	1660	3230	**509**	4040	55.1	**2160**	226	1670	4130
				2/3/2021	MRS03-Thomp M-SS3001	3	µg/kg	0.768 J	0.836 J	3.41 J	27.2 J	28.2 J	40.6 J	19.1 J	15.2 J	35.0 J	5.15 J	47.8 J	2.64 UJ	20.8 J	1.81 J	18.9 J	45.0 J
					MRS03-Thomp M-SS3002	3	µg/kg	1.16 J	1.07 J	3.12 J	23.8	24.9	36.6	17.1	13.8	32.1	4.66 J	42.3	2.60 U	19.7	2.79 J	17.1	40.8
					MRS03-Thomp M-SS3003	3	µg/kg	1.15 J	1.52 J	5.15 J	46.9	45.7	69.6	33.0	27.2	57.6	9.01 J	75.5	2.58 U	35.5	2.70 J	29.1	72.9
					MRS03-Thomp M-SS4001	4	µg/kg	1.35 J	1.26 J	3.89 J	26.9	27.0	39.9	18.4	15.0	35.1	5.01 J	48.3	2.62 U	21.6	2.64 J	20.5	46.0
					MRS03-Thomp M-SS4002	4	µg/kg	2.10 J	2.73 J	16.4	76.9	66.9	101	43.8	36.8	82.0	11.8	157	2.30 J	50.0	3.86 J	76.5	130
					MRS03-Thomp M-SS4003	4	µg/kg	2.30 J	5.11 J	29.0	141	**122**	188	79.9	69.4	154	21.3	311	3.06 J	93.6	5.00 J	165	261
				4/1/2021	MRS03-Thomp M-SS5001	5	µg/kg	1.98 U	1.06 U	4.52 J	36.9	43.8	57.1	29.1	21.1	44.6	7.16 J	58.7	2.64 U	37.1	1.48 J	21.9	57.3
					MRS03-Thomp M-SS5002	5	µg/kg	1.88 UJ	1.00 UJ	6.30 J	55.1 J	69.4 J	90.6 J	49.9 J	34.4 J	67.8 J	11.1 J	84.5 J	2.51 UJ	60.5 J	1.43 J	30.5 J	84.7 J
					MRS03-Thomp M-SS5003	5	µg/kg	6.43 J	28.2	270	949	**931**	**1260**	633	513	1070	**135**	2140	25.7	774	17.2	1180	1810
					MRS03-Thomp M-SS6001	6	µg/kg	1.24 J	1.05 U	11.0	50.4	51.1	70.7	36.1	27.7	56.4	8.17 J	101	2.63 U	44.1	2.49 J	51.8	86.5
					MRS03-Thomp M-SS6002	6	µg/kg	1.96 U	1.04 U	2.60 J	18.9 J	21.7 J	29.5 J	15.0 J	10.8 J	23.3 J	4.22 J	32.1 J	2.61 U	18.9 J	1.12 J	13.0	31.2 J
				4/2/2021	MRS03-Thomp M-SS6003	6	µg/kg	2.73 J	5.88 J	23.8	127	**131**	174	86.7	66.6	147	24.6	232	2.88 J	106	6.33 J	108	215
31	Thompson Easement (N)			12/3/2020	MRS03-Thomp N-SS001	0	µg/kg	63.4 J	185	436	3400	**4400**	**5650**	2970	2250	4420	**793**	5850	69.1 J	**3210**	231	2110	6100
					MRS03-Thomp N-SS002	0	µg/kg	26.0 J	97.0 J	276	**2410**	**2960**	**3990**	2100	1540	2970	**550**	3870	35.9 J	**2550**	83.5 J	1390	3880
					MRS03-Thomp N-SS003	0	µg/kg	35.3 J	124	308	**2740**	**3380**	**4600**	2550	1830	3340	**684**	4280	42.5 J	**2810**	118	1490	4350
					MRS03-Thomp N-SS1001	1	µg/kg	15.4	46.4 J	116 J	882	**1030**	**1320**	634	562	1130	**189 J**	1500	16.5	739	39.7 J	688	1530
					MRS03-Thomp N-SS1002	1	µg/kg	21.7	138	192	**1960**	**2450**	**3160**	1390	1280	2420	**390**	3050	44.5	**1670**	78.3	996	3120
					MRS03-Thomp N-SS1003	1	µg/kg	11.6	35.6	205	**1300**	**1420**	**1960**	899	787	1550	**200**	2530	23.2	1040	37.8	1130	2300
					MRS03-Thomp N-SS2001	2	µg/kg	3.51 J	0.680 J	2.99 J	15.9	17.0	24.8	12.1	8.97 J	19.0	3.06 J	28.7	2.61 U	13.3	15.8	12.9	26.2
					MRS03-Thomp N-SS2002	2	µg/kg	3.74 J	0.656 J	1.62	12.9	15.9	22.3	11.1	8.11 J	16.8	2.90 J	21.6	2.60 U	12.2	12.2	8.72 J	21.5
					MRS03-Thomp N-SS2003	2	µg/kg	3.83 J	1.85 J	24.7	132	121	191	86.8	64.6	138	22.6	276	0.994 J	95.5	16.9	122	226
				3/4/2021	MRS03-Thomp N-SS3001	3	µg/kg	1.97 U	0.620 J	1.91 J	17.0	24.2	27.1	14.7	11.0	20.6	3.59 J	30.2	2.63 U	18.2	4.98 J	11.6	28.6
					MRS03-Thomp N-SS3002	3	µg/kg	0.950 J	0.956 J	2.26 J	20.8	30.4	32.5	17.6	14.0	25.7	4.55 J	33.3	2.60 U	21.9	1.79 J	12.3	32.1
					MRS03-Thomp N-SS3003	3	µg/kg	0.566 J	0.634 J	1.89 J	15.7	22.2	25.6	13.5	10.2	18.6	3.47 J	26.2	2.37 U	17.2	1.31 J	10.2	24.1
					MRS03-Thomp N-SS4001	4	µg/kg	1.91 U	0.408 J	4.14 U	12.7	17.1	19.6	9.78	8.16 J	14.1	2.66 J	17.9	2.55 U	13.0	0.732 J	6.07 J	16.8
					MRS03-Thomp N-SS4002	4	µg/kg	1.96 U	0.388 J	1.52 J	10.3	13.9 J	15.5 J	8.54 J	6.65 J	11.6 J	6.52 U	17.6 J	2.61 U	10.3 J	0.732 J	7.73 J	15.4 J
					MRS03-Thomp N-SS4003	4	µg/kg	1.90 U	1.11 J	2.25 J	21.8	30.0	34.1	17.5	14.5	26.8	5.11 J	34.5	2.53 U	22.7	1.24 J	12.7	34.4
31	Thompson Easement (O)			12/2/2020	MRS03-Thomp O-SS001	0	µg/kg	15.7	51.0	165	**1140**	**1470**	**1990**	1010	828	1500	**277**	2020	20.1	1140	41.2	814	2030
					MRS03-Thomp O-SS002	0	µg/kg	11.5 J	47.7 J	173 J	**1270**	**1530**	**2060**	1010	874	1600	**285 J**	2200	18.7 J	**1160**	33.8 J	913	2140
					MRS03-Thomp O-SS003	0	µg/kg	15.8 J	44.0 J	157 J	1130	**1350**	**1840**	933	769	1400	**245 J**	1870	18.1 J	1060	51.2 J	807	1800
					MRS03-Thomp O-SS1001	1	µg/kg	2.99 J	6.27 J	18.2 J	201 J	**285 J**	364 J	179 J	129 J	221 J	53.1 J	247 J	2.23 J	234	7.46 J	83.7 J	247 J
					MRS03-Thomp O-SS1002	1	µg/kg	4.29 J	15.6 J	88.8 J	384 J	**437**	603	295 J	228 J	463	84.1 J	856	17.2 J	336 J	11.2 J	412	760
					MRS03-Thomp O-SS1003	1	µg/kg	4.91 J	7.85 J	31.0 J	244 J	**290 J**	375 J	186 J	134 J	249 J	53.3 J	410 J	2.75 J	246 J	12.8 J	152 J	388 J
					MRS03-Thomp O-SS2001	2	µg/kg	2.20 J	0.583 J	4.26 U	7.91 J	9.25 J	12.0	5.52 J	4.46 J	9.27 J	6.56 U	10.8	2.62 U	7.97 J	5.66 J	4.91 J	11.4
					MRS03-Thomp O-SS2002	2	µg/kg	2.43 J	1.05 U	4.28 U	3.20 J	3.80 J	4.88 J	2.79 J	2.44 J	3.69 J	6.59 U	3.95 J	2.64 U	3.55 J	6.74 J	6.59 U	4.06 J
					MRS03-Thomp O-SS2003	2	µg/kg	3.45 J	0.432 J	4.30 U	6.16 J	7.26 J	9.40 J	4.55 J	3.77 J	6.62 J	6.61 U	8.98 J	2.65 U	5.78 J	8.27 J	3.71 J	8.80 J
31	Thompson Easement (P)			12/1/2020	MRS03-Thomp P-SS001	0	µg/kg	7.95 J	23.8 J	87.6 J	521	**672**	885	441	362	678	**116 J**	999	10.1 J	503	20.4 J	410	988
					MRS03-Thomp P-SS002	0	µg/kg	36.5	73.7	143	956	**1220**	**1560**	729	646	1310	**200**	1600	26.9	856	120	734	1720
					MRS03-Thomp P-SS003	0	µg/kg	8.06 J	19.2 J	55.9 J	442	**551**	749	374	260 J	589	98.4 J	740	6.49 J	430	20.6 J	262 J	744
					MRS03-Thomp P-SS1001	1	µg/kg	4.19 J	8.39 J	26.5 J	192 J	**233 J**	318 J	141 J	106 J	225 J	44.5 J	308 J	3.70 J	186 J	16.6 J	133 J	304 J
					MRS03-Thomp P-SS1002	1	µg/kg	4.96 J	10.2 J	21.7 J	186 J	**216 J**	272 J	115 J	94.5 J	205 J	38.4 J	266 J	3.20 J	159 J	14.9 J	103 J	293 J
					MRS03-Thomp P-SS1003	1	µg/kg	4.31 J	6.35 J	19.1 J	202 J	**294 J**	374 J	185 J	126 J	239 J	57.4 J	266 J	2.13 J	245 J	10.2 J	88.8 J	274 J
					MRS03-Thomp P-SS2001	2	µg/kg	2.32 J	0.566 J	1.58 J	6.23 J	6.85 J	7.94 J	5.12 J	4.97 J	6.16 J	3.67 J	7.18 J	2.64 U	6.53 J	5.54 J	3.23 J	7.02 J
					MRS03-Thomp P-SS2002	2	µg/kg	2.16 J	0.322 J	4.22 UJ	4.37 J	4.99 J	6.54 J	3.17 J	2.41 J	4.86 J	6.50 UJ	6.73 J	2.60 UJ	4.48 J	4.97 J	3.61 J	6.93 J
					MRS03-Thomp P-SS2003	2	µg/kg	2.16 J	1.05 UJ	4.28 UJ	4.57 J	4.52 J	6.39 J	3.13 J	2.61 J	4.38 J	6.58 UJ	6.88 J	2.63 UJ	4.16 J	5.11 J	3.57 J	6.00 J

TABLE 4-4
SUMMARY OF PAHs ANALYTICAL RESULTS - SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	**BENZ(A)ANTHRACENE**	**BENZO(A)PYRENE**	**BENZO(B)FLUORANTHENE**	BENZO(G,H,I)PERYLENE	**BENZO(K)FLUORANTHENE**	CHRYSENE	**DIBENZ(A,H)ANTHRACENE**	FLUORANTHENE	FLUORENE	**INDENO(1,2,3-CD)PYRENE**	NAPHTHALENE	PHENANTHRENE	PYRENE
							Screening Level (µg/kg)	230,000	3,590,000	17,900,000	**1,130**	**115**	**1,150**	1,800,000	**11,500**	115,000	**115**	2,390,000	2,390,000	**1,150**	3,820	22,000,000	1,790,000
31	Thompson Easement (Q)			11/17/2020	MRS03-Thomp Q-SS001	0	µg/kg	5.78 J	14.4 J	24.5 J	317 J	**457**	594	330 J	204 J	372	79.6 J	440	5.10 J	376 J	19.9 J	144 J	486
					MRS03-Thomp Q-SS002	0	µg/kg	9.94 J	40.6 J	61.9 J	659	**878**	1110	530 J	479	762	**171 J**	1100	12.0 J	728	34.4 J	340	1110
					MRS03-Thomp Q-SS003	0	µg/kg	6.47 J	11.7	28.0	252	**270**	376	220	164	260	62.6	381	4.70 J	252	20.2	159	388
					MRS03-Thomp Q-SS1001	1	µg/kg	6.11 J	10.9	19.0	128	**152**	186	87.4	65.5	159	26.8	195	4.01 J	104	14.2	108	200
					MRS03-Thomp Q-SS1002	1	µg/kg	3.61 J	2.90 J	14.1	79.5	84.3	113	54.6	42.8	84.5	15.3	133	2.21 J	64.3	7.92 J	76.8	115
					MRS03-Thomp Q-SS1003	1	µg/kg	3.70 J	3.51 J	16.3 J	83.0 J	88.9 J	119 J	53.9 J	40.1 J	89.8 J	15.4 J	142 J	2.73 J	63.8 J	8.10 J	86.5 J	124 J
					MRS03-Thomp Q-SS2001	2	µg/kg	2.29 J	1.04 UJ	4.24 UJ	4.24 UJ	4.24 UJ	2.36 J	6.52 UJ	4.24 UJ	2.05 J	6.52 UJ	2.07 J	2.61 UJ	6.52 UJ	5.48 J	6.52 UJ	6.52 UJ
					MRS03-Thomp Q-SS2002	2	µg/kg	2.97 J	1.01 U	4.10 U	4.10 U	4.10 U	6.31 U	6.31 U	4.10 U	4.10 U	6.31 U	4.10 U	2.52 U	6.31 U	7.18 J	6.31 U	6.31 U
					MRS03-Thomp Q-SS2003	2	µg/kg	2.90 J	0.977 UJ	3.97 UJ	8.37 J	9.33 J	11.7 J	5.65 J	4.34 J	10.7 J	6.10 UJ	11.2 J	2.44 UJ	6.42 J	6.93 J	5.26 J	12.8 J

Notes:
'* parcel was resampled during the RI Addendum field activities due to rejected data in 2019 RI activities
(A) - letter designates that due to size of parcel, parcel was subdivided into sub-parcels or easement subdivision
APN - Assessor's Parcel Number
J - estimated value; the analyte was positively identified
U - not detected above the limit of detection
UJ - estimated non-detect
X - rejected data
µg/kg - microgram per kilogram
bolded exceeds screening value

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
1	31021063A	--	E Thompson Ave	2/12/2020	MRS03-APN31021063A-SS001	0	mg/kg	1.45 U	11.2	9.14	40.2
					MRS03-APN31021063A-SS002	0	mg/kg	1.36 U	13.5	10.6	46.1
					MRS03-APN31021063A-SS003	0	mg/kg	1.43 U	13.6	11.1	47.8
					MRS03-APN31021063A-SS1001	1	mg/kg	1.46 U	14.2	12.3	47.9
					MRS03-APN31021063A-SS1002	1	mg/kg	1.37 UJ	13.7 J	12.6 J	45.9 J
				2/13/2020	MRS03-APN31021063A-SS1003	1	mg/kg	1.50 U	14.1	11.4	47.3
				2/12/2020	MRS03-APN31021063A-SS2001	2	mg/kg	1.43 U	14.8	10.3	47.3
					MRS03-APN31021063A-SS2002	2	mg/kg	1.43 U	16.3	11.3	52.4
				2/13/2020	MRS03-APN31021063A-SS2003	2	mg/kg	1.49 U	15.1	10.7	50.1
1	31021063B	--	E Thompson Ave	1/23/2020	MRS03-APN31021063B-SS001	0	mg/kg	1.46 UJ	15.2	14.8	56.0
					MRS03-APN31021063B-SS002	0	mg/kg	1.40 UJ	14.9	15.1	54.7
				1/24/2020	MRS03-APN31021063B-SS003	0	mg/kg	1.49 UJ	15.2	16.5	55.6
				1/23/2020	MRS03-APN31021063B-SS1001	1	mg/kg	1.42 UJ	15.0	12.5	52.3
				1/24/2020	MRS03-APN31021063B-SS1002	1	mg/kg	1.41 UJ	14.1	12.3	49.1
					MRS03-APN31021063B-SS1003	1	mg/kg	1.39 UJ	15.4	12.8	52.9
				1/23/2020	MRS03-APN31021063B-SS2001	2	mg/kg	1.39 UJ	14.6	11.0	52.0
				1/24/2020	MRS03-APN31021063B-SS2002	2	mg/kg	1.49 UJ	15.9	11.5	54.9
					MRS03-APN31021063B-SS2003	2	mg/kg	1.48 UJ	15.1	11.3	53.7

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
1	31021063C	--	E Thompson Ave	1/28/2020	MRS03-APN31021063C-SS001	0	mg/kg	1.45 U	13.5	11.7	46.6
					MRS03-APN31021063C-SS002	0	mg/kg	1.46 U	15.0	12.4	50.9
					MRS03-APN31021063C-SS003	0	mg/kg	1.45 U	15.1	13.0	51.3
					MRS03-APN31021063C-SS1001	1	mg/kg	7.00 UJ	23.3 UJ	77.1 J	72.0 J
					MRS03-APN31021063C-SS1002	1	mg/kg	7.04 U	23.5 U	16.6	72.1
					MRS03-APN31021063C-SS1003	1	mg/kg	1.42 U	15.8	14.4	52.9
					MRS03-APN31021063C-SS2001	2	mg/kg	7.02 U	23.4 U	14.2	66.5
					MRS03-APN31021063C-SS2002	2	mg/kg	7.20 U	24.0 U	14.0	68.1
					MRS03-APN31021063C-SS2003	2	mg/kg	7.23 U	24.1 U	15.1	73.3
1	31021063D	--	E Thompson Ave	1/28/2020	MRS03-APN31021063D-SS001	0	mg/kg	1.45 U	12.5	14.6	44.3
					MRS03-APN31021063D-SS002	0	mg/kg	1.42 U	13.4	15.5	46.5
					MRS03-APN31021063D-SS003	0	mg/kg	1.48 U	12.7	15.7	45.7
					MRS03-APN31021063D-SS1001	1	mg/kg	1.49 U	14.4	11.3	47.7
				1/29/2020	MRS03-APN31021063D-SS1002	1	mg/kg	1.39 UJ	13.9	11.2	46.0
				1/29/2020	MRS03-APN31021063D-SS1003	1	mg/kg	1.47 U	13.4	10.9	45.9
				1/28/2020	MRS03-APN31021063D-SS2001	2	mg/kg	1.44 U	14.7	10.0	50.2
				1/29/2020	MRS03-APN31021063D-SS2002	2	mg/kg	1.42 U	13.8	9.76	47.5
					MRS03-APN31021063D-SS2003	2	mg/kg	1.43 U	13.7	9.61	47.0

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
1	31021063E	--	E Thompson Ave	1/29/2020	MRS03-APN31021063E-SS001	0	mg/kg	1.46 U	14.5	15.8	49.2
					MRS03-APN31021063E-SS002	0	mg/kg	1.48 U	14.7	15.4	49.5
					MRS03-APN31021063E-SS003	0	mg/kg	6.89 U	23.0 U	18.1	62.2
					MRS03-APN31021063E-SS1001	1	mg/kg	1.45 U	14.7	16.7	48.9
					MRS03-APN31021063E-SS1002	1	mg/kg	1.48 UJ	14.3	12.1 J	47.4 J
					MRS03-APN31021063E-SS1003	1	mg/kg	1.42 U	14.3	12.0	46.8
					MRS03-APN31021063E-SS2001	2	mg/kg	1.49 U	14.3	10.0	49.3
					MRS03-APN31021063E-SS2002	2	mg/kg	1.47 U	14.2	9.94	48.6
					MRS03-APN31021063E-SS2003	2	mg/kg	1.45 U	15.5	10.3	50.3
1	31021063F	--	E Thompson Ave	1/30/2020	MRS03-APN31021063F-SS001	0	mg/kg	1.42 U	12.7	17.6	47.6
					MRS03-APN31021063F-SS002	0	mg/kg	1.49 U	13.3	17.1	47.0
					MRS03-APN31021063F-SS003	0	mg/kg	1.45 U	12.9	17.7	47.4
					MRS03-APN31021063F-SS1001	1	mg/kg	1.44 U	11.7	11.4	42.5
					MRS03-APN31021063F-SS1002	1	mg/kg	1.48 U	12.5	11.5	44.5
					MRS03-APN31021063F-SS1003	1	mg/kg	1.46 U	12.8	11.4	44.4
					MRS03-APN31021063F-SS2001	2	mg/kg	1.48 U	12.4	9.23	45.1
					MRS03-APN31021063F-SS2002	2	mg/kg	1.50 U	12.6	9.83	45.1
					MRS03-APN31021063F-SS2003	2	mg/kg	1.44 U	12.5	9.39	44.8

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
1	31021063G	--	E Thompson Ave	1/30/2020	MRS03-APN31021063G-SS001	0	mg/kg	1.46 U	13.2	19.2	47.9
					MRS03-APN31021063G-SS002	0	mg/kg	1.41 U	13.3	61.0	49.0
					MRS03-APN31021063G-SS003	0	mg/kg	1.42 UJ	12.8 J	18.4 J	46.7 J
					MRS03-APN31021063G-SS1001	1	mg/kg	1.36 U	14.1	12.4	47.8
					MRS03-APN31021063G-SS1002	1	mg/kg	1.43 U	14.6	12.5	48.0
				1/31/2020	MRS03-APN31021063G-SS1003	1	mg/kg	1.45 U	13.9	12.8	47.7
				1/30/2020	MRS03-APN31021063G-SS2001	2	mg/kg	1.50 U	13.6	10.2	48
					MRS03-APN31021063G-SS2002	2	mg/kg	1.38 U	14.0	10.5	48.2
				1/31/2020	MRS03-APN31021063G-SS2003	2	mg/kg	1.47 U	14.1	10.3	48.8
1	31021063H	--	E Thompson Ave	2/11/2020	MRS03-APN31021063H-SS001	0	mg/kg	1.49 U	17.3	63.6	57.3
					MRS03-APN31021063H-SS002	0	mg/kg	1.43 U	16.7	53.6	54.6
					MRS03-APN31021063H-SS003	0	mg/kg	1.50 UJ	17.1	19.9 J	55.7 J
					MRS03-APN31021063H-SS1001	1	mg/kg	1.41 U	15.9	14.2	49.8
					MRS03-APN31021063H-SS1002	1	mg/kg	1.40 U	16.2	15.0	50.5
					MRS03-APN31021063H-SS1003	1	mg/kg	1.45 U	15.0	13.6	48
					MRS03-APN31021063H-SS2001	2	mg/kg	1.39 U	16.4	10.9	52.1
					MRS03-APN31021063H-SS2002	2	mg/kg	1.40 U	15.4	10.7	50.7
					MRS03-APN31021063H-SS2003	2	mg/kg	1.39 U	18.5	10.4	50.6

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
1	31021063I	--	E Thompson Ave	2/12/2020	MRS03-APN31021063I-SS001	0	mg/kg	1.46 U	13.4	60.7	45.8
					MRS03-APN31021063I-SS002	0	mg/kg	1.40 U	12.8	26.3	44.8
					MRS03-APN31021063I-SS003	0	mg/kg	1.42 U	13.2	26.5	45.3
				2/13/2020	MRS03-APN31021063I-SS1001	1	mg/kg	1.47 U	14.2	104	45.7
					MRS03-APN31021063I-SS1002	1	mg/kg	1.46 U	14.3	25.9	47
					MRS03-APN31021063I-SS1003	1	mg/kg	1.46 U	13.4	14.8	43.9
					MRS03-APN31021063I-SS2001	2	mg/kg	1.40 U	14.4	10.3	47.5
					MRS03-APN31021063I-SS2002	2	mg/kg	1.42 U	13.9	9.88	46.7
					MRS03-APN31021063I-SS2003	2	mg/kg	1.39 U	14.2	9.77	46.6
1	31021063J	--	E Thompson Ave	2/13/2020	MRS03-APN31021063J-SS001	0	mg/kg	1.48 U	14.3	63.0	50.6
					MRS03-APN31021063J-SS002	0	mg/kg	1.47 U	14.7	102	50.8
					MRS03-APN31021063J-SS003	0	mg/kg	1.46 UJ	14.1	30.0 J	48.7 J
					MRS03-APN31021063J-SS1001	1	mg/kg	1.42 U	14.5	16.1	48
					MRS03-APN31021063J-SS1002	1	mg/kg	1.44 U	14.8	58	48.2
					MRS03-APN31021063J-SS1003	1	mg/kg	1.42 U	14.1	17.4	47.1
					MRS03-APN31021063J-SS2001	2	mg/kg	1.48 U	14.7	11.0	50.7
					MRS03-APN31021063J-SS2002	2	mg/kg	1.40 U	14.6	11.8	50.2
					MRS03-APN31021063J-SS2003	2	mg/kg	1.47 U	14.1	11.0	50.2

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
1	31021063K	--	E Thompson Ave	2/14/2020	MRS03-APN31021063K-SS001	0	mg/kg	1.46 U	16.8	66.5	56.6
					MRS03-APN31021063K-SS002	0	mg/kg	1.46 U	16.4	107	55.6
					MRS03-APN31021063K-SS003	0	mg/kg	1.49 U	16.7	132	57
				2/13/2020	MRS03-APN31021063K-SS1001	1	mg/kg	1.43 U	15.5	22.4	49.2
					MRS03-APN31021063K-SS1002	1	mg/kg	1.42 U	16.0	104	50.8
					MRS03-APN31021063K-SS1003	1	mg/kg	1.48 U	13.6	22.0	45.8
					MRS03-APN31021063K-SS2001	2	mg/kg	1.45 U	15.4	32.7	50.1
					MRS03-APN31021063K-SS2002	2	mg/kg	1.38 U	15.0	12.4	50.1
					MRS03-APN31021063K-SS2003	2	mg/kg	1.47 U	14.4	12	48.6
2	31021078A	--	E Thompson Ave	2/18/2020	MRS03-APN31021078A-SS001	0	mg/kg	1.48 U	12.9	79.1	46.7
					MRS03-APN31021078A-SS002	0	mg/kg	1.49 U	12.5	129	46.2
					MRS03-APN31021078A-SS003	0	mg/kg	1.47 U	12.3	74.2	45.8
					MRS03-APN31021078A-SS1001	1	mg/kg	1.46 UJ	11.8	17.2	41.7
					MRS03-APN31021078A-SS1002	1	mg/kg	1.39 U	13.7	34.7	47.3
					MRS03-APN31021078A-SS1003	1	mg/kg	1.47 U	14.6	39.3	50.1
					MRS03-APN31021078A-SS2001	2	mg/kg	1.42 U	14.1	56.7	48.8
					MRS03-APN31021078A-SS2002	2	mg/kg	1.46 U	14.2	10.5	49.8
					MRS03-APN31021078A-SS2003	2	mg/kg	1.47 U	14.8	11	51.8

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
2	31021078B	--	E Thompson Ave	9/15/2020	MRS03-APN31021078B-SS001R	0	mg/kg	3.68 U	12.7 J	322	50.2
					MRS03-APN31021078B-SS002R	0	mg/kg	3.44 U	12.8 J	111	49.3
				9/22/2020	MRS03-APN31021078B-SS003R	0	mg/kg	1.41 U	12.2	59.9	44.8
					MRS03-APN31021078B-SS1001R	1	mg/kg	1.39 U	13	46.4	47.9
				9/15/2020	MRS03-APN31021078B-SS1002R	1	mg/kg	3.60 U	14	35.6	50.8
				9/22/2020	MRS03-APN31021078B-SS1003R	1	mg/kg	1.48 U	12.7	22.3	46.8
				9/15/2020	MRS03-APN31021078B-SS2001R	2	mg/kg	3.48 U	13.8	12.5	51.2
				9/15/2020	MRS03-APN31021078B-SS2002R	2	mg/kg	3.72 UJ	14.6	11.9	53.9 J
				9/30/2020	MRS03-APN31021078B-SS2003R	2	mg/kg	1.48 U	9.24	15.8	34.3
2	31021078C	--	E Thompson Ave	2/25/2020	MRS03-APN31021078C-SS001	0	mg/kg	1.45 U	17	25.5	62.7
					MRS03-APN31021078C-SS002	0	mg/kg	1.47 U	18.1	23.8	63.3
					MRS03-APN31021078C-SS003	0	mg/kg	1.42 U	21.2	63.7	61.9
					MRS03-APN31021078C-SS1001	1	mg/kg	1.44 U	15.8	109	53.9
					MRS03-APN31021078C-SS1002	1	mg/kg	1.43 U	15.3	30.3	52.8
					MRS03-APN31021078C-SS1003	1	mg/kg	1.43 U	15.6	25.2	53
					MRS03-APN31021078C-SS2001	2	mg/kg	1.49 U	18.7	15.1	60.5
					MRS03-APN31021078C-SS2002	2	mg/kg	1.47 U	16.8	12.1	55.9
					MRS03-APN31021078C-SS2003	2	mg/kg	1.46 U	17.7	13.7	58.5

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
2	31021078D	--	E Thompson Ave	2/28/2020	MRS03-APN31021078D-SS001	0	mg/kg	1.46 U	11.7	88.7	46.7
					MRS03-APN31021078D-SS002	0	mg/kg	1.45 U	11.8	191	46
					MRS03-APN31021078D-SS003	0	mg/kg	1.47 U	11.6	66	46.3
				2/26/2020	MRS03-APN31021078D-SS1001	1	mg/kg	1.47 U	13.1	15	48.2
				2/27/2020	MRS03-APN31021078D-SS1002	1	mg/kg	1.42 U	12.9	43.4	47.2
					MRS03-APN31021078D-SS1003	1	mg/kg	1.45 UJ	10.8	31.8 J	40.5 J
				2/26/2020	MRS03-APN31021078D-SS2001	2	mg/kg	1.37 U	13.4	9.91	49.6
				2/27/2020	MRS03-APN31021078D-SS2002	2	mg/kg	1.37 U	13.5	10.4	50.5
					MRS03-APN31021078D-SS2003	2	mg/kg	1.37 U	13.1	9.97	49.5
2	31021078E	--	E Thompson Ave	9/22/2020	MRS03-APN31021078E-SS001R	0	mg/kg	1.46 U	14.4	31.2	53.9
					MRS03-APN31021078E-SS002R	0	mg/kg	1.39 U	14.1	76.5	52.3
					MRS03-APN31021078E-SS003R	0	mg/kg	1.43 U	15.2	33.3	55.4
				9/16/2020	MRS03-APN31021078E-SS1001R	1	mg/kg	3.55 U	16.9	41.1	58.5
					MRS03-APN31021078E-SS1002R	1	mg/kg	3.68 U	17.5	151	61.4
					MRS03-APN31021078E-SS1003R	1	mg/kg	3.53 U	17.3	20.6	59.9
					MRS03-APN31021078E-SS2001R	2	mg/kg	3.57 U	16.8	13.7	61.6
					MRS03-APN31021078E-SS2002R	2	mg/kg	3.43 U	12.3 J	9.71	47.3
					MRS03-APN31021078E-SS2003R	2	mg/kg	3.44 U	16.5	13.9	61

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
2	31021078F	--	E Thompson Ave	3/3/2020	MRS03-APN31021078F-SS001	0	mg/kg	1.46 U	13.6	14.8	48.5
					MRS03-APN31021078F-SS002	0	mg/kg	1.47 U	16.1	17.9	56.6
					MRS03-APN31021078F-SS003	0	mg/kg	1.47 U	15.7	16.4	55.5
					MRS03-APN31021078F-SS1001	1	mg/kg	1.41 U	14.4	30.3	47.3
					MRS03-APN31021078F-SS1002	1	mg/kg	1.44 UJ	16.8	90.5 J	52.4 J
					MRS03-APN31021078F-SS1003	1	mg/kg	1.47 U	14.6	40.3	47.6
					MRS03-APN31021078F-SS2001	2	mg/kg	1.44 U	15.9	11.5	50.9
					MRS03-APN31021078F-SS2002	2	mg/kg	1.39 U	14.3	10	45.8
					MRS03-APN31021078F-SS2003	2	mg/kg	1.48 U	16.3	11.4	51.7
2	31021078G	--	E Thompson Ave	3/4/2020	MRS03-APN31021078G-SS001	0	mg/kg	7.38 U	24.6 U	71.8	45.8
					MRS03-APN31021078G-SS002	0	mg/kg	1.49 UJ	13	88.0 J	45.1 J
					MRS03-APN31021078G-SS003	0	mg/kg	7.32 U	24.4 U	29.2	43.9
					MRS03-APN31021078G-SS1001	1	mg/kg	7.40 U	24.7 U	18.3	46.4
					MRS03-APN31021078G-SS1002	1	mg/kg	6.89 U	23.0 U	21.3	55.1
					MRS03-APN31021078G-SS1003	1	mg/kg	7.20 U	24.0 U	21.5	59.4
					MRS03-APN31021078G-SS2001	2	mg/kg	1.45 U	14.3	12	48.6
					MRS03-APN31021078G-SS2002	2	mg/kg	1.42 U	14.6	11.1	49.3
					MRS03-APN31021078G-SS2003	2	mg/kg	7.22 U	24.1 U	10.9	51.8

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
2	31021078H	--	E Thompson Ave	3/5/2020	MRS03-APN31021078H-SS001	0	mg/kg	1.46 U	13.7	127	48.1
					MRS03-APN31021078H-SS002	0	mg/kg	1.49 U	12.9	62.1	46.5
					MRS03-APN31021078H-SS003	0	mg/kg	1.47 U	13.3	212	46.9
					MRS03-APN31021078H-SS1001	1	mg/kg	1.44 U	16.6	45.4	51.3
				3/6/2020	MRS03-APN31021078H-SS1002	1	mg/kg	1.48 U	16.2	85.5	51
					MRS03-APN31021078H-SS1003	1	mg/kg	1.39 U	15.9	57.4	49.6
				3/5/2020	MRS03-APN31021078H-SS2001	2	mg/kg	1.45 UJ	16.3	12.0 J	53.3 J
				3/6/2020	MRS03-APN31021078H-SS2002	2	mg/kg	1.42 U	16.3	12.4	51.8
					MRS03-APN31021078H-SS2003	2	mg/kg	1.47 U	15.7	11.8	52.7
2	31021078I	--	E Thompson Ave	9/17/2020	MRS03-APN31021078I-SS001	0	mg/kg	1.38 U	15.9	29.7	57.4
					MRS03-APN31021078I-SS002	0	mg/kg	1.44 U	15.5	28.3	57.7
					MRS03-APN31021078I-SS003	0	mg/kg	1.47 U	16.2	72.9	58.8
					MRS03-APN31021078I-SS1001	1	mg/kg	7.18 U	23.9 U	69.4	65.8
					MRS03-APN31021078I-SS1002	1	mg/kg	1.48 U	15.1	164	51
					MRS03-APN31021078I-SS1003	1	mg/kg	1.45 U	15.7	42.4	52.8
					MRS03-APN31021078I-SS2001	2	mg/kg	1.45 U	16.4	17	54.9
					MRS03-APN31021078I-SS2002	2	mg/kg	1.40 U	15.5	16.9	53.1
					MRS03-APN31021078I-SS2003	2	mg/kg	1.49 U	16.8	20.3	56.1

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
2	31021078J	--	E Thompson Ave	9/17/2020	MRS03-APN31021078J-SS001	0	mg/kg	1.40 U	14.6	203	53.3
				9/18/2020	MRS03-APN31021078J-SS002	0	mg/kg	1.49 U	17.1	124	54.4
					MRS03-APN31021078J-SS003	0	mg/kg	1.45 U	15.9	51.6	57.6
				9/17/2020	MRS03-APN31021078J-SS1001	1	mg/kg	1.49 U	16.2	31.2	55.4
					MRS03-APN31021078J-SS1002	1	mg/kg	1.49 UJ	14.4	93.2 J	50.6 J
				9/18/2020	MRS03-APN31021078J-SS1003	1	mg/kg	1.47 U	16.6	58.2	56.1
				9/17/2020	MRS03-APN31021078J-SS2001	2	mg/kg	1.45 U	14.5	14.4	52.9
					MRS03-APN31021078J-SS2002	2	mg/kg	1.45 U	14.9	17.1	52.9
				9/18/2020	MRS03-APN31021078J-SS2003	2	mg/kg	1.46 U	15.2	15.1	55.2
2	31021078K	--	E Thompson Ave	9/21/2020	MRS03-APN31021078K-SS001	0	mg/kg	3.67 U	12.2 U	44.1	46.7
					MRS03-APN31021078K-SS002	0	mg/kg	3.45 U	11.7	59.3	44.9
					MRS03-APN31021078K-SS003	0	mg/kg	3.57 U	12.4	53.8	44.4
				9/22/2020	MRS03-APN31021078K-SS1001	1	mg/kg	3.58 U	14.8	22.2	52.5
					MRS03-APN31021078K-SS1002	1	mg/kg	3.48 U	14.7	32.1	51.4
				9/30/2020	MRS03-APN31021078K-SS1003	1	mg/kg	1.38 U	14.6	20.1	49.2
				9/22/2020	MRS03-APN31021078K-SS2001	2	mg/kg	3.71 U	16.5	14.4	59.6
					MRS03-APN31021078K-SS2002	2	mg/kg	3.52 U	14.9	13.3	55.4
					MRS03-APN31021078K-SS2003	2	mg/kg	3.63 U	15.4	13.9	56.9

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
2	31021078L	--	E Thompson Ave	9/22/2020	MRS03-APN31021078L-SS001	0	mg/kg	1.41 U	10.2	21.5	40.2
					MRS03-APN31021078L-SS002	0	mg/kg	1.37 U	10.8	23.4	42.4
					MRS03-APN31021078L-SS003	0	mg/kg	1.39 UJ	10.8	23	39.1
				9/23/2020	MRS03-APN31021078L-SS1001	1	mg/kg	1.47 U	12.2	14.7	43.5
					MRS03-APN31021078L-SS1002	1	mg/kg	1.40 U	11	14.9	40.7
					MRS03-APN31021078L-SS1003	1	mg/kg	1.44 U	11.5	15.7	41.9
					MRS03-APN31021078L-SS2001	2	mg/kg	1.46 U	13	12	44.3
					MRS03-APN31021078L-SS2002	2	mg/kg	1.42 U	11.8	10.5	43.6
					MRS03-APN31021078L-SS2003	2	mg/kg	1.47 U	13.2	24.2	46.9
2	31021078M	--	E Thompson Ave	9/23/2020	MRS03-APN31021078M-SS001	0	mg/kg	3.63 U	15.8	100	58.9
					MRS03-APN31021078M-SS002	0	mg/kg	3.64 UJ	17.9	100 J	63.6
					MRS03-APN31021078M-SS003	0	mg/kg	3.58 U	16.4	83.5	59
					MRS03-APN31021078M-SS1001	1	mg/kg	3.59 U	19	59.2	64.7
					MRS03-APN31021078M-SS1002	1	mg/kg	3.49 U	19.8	68.6	67.5
					MRS03-APN31021078M-SS1003	1	mg/kg	3.71 U	19.8	56.6	67.2
					MRS03-APN31021078M-SS2001	2	mg/kg	3.62 U	16.6	13.6	62.6
					MRS03-APN31021078M-SS2002	2	mg/kg	3.51 U	16	50.7	61.6
				9/30/2020	MRS03-APN31021078M-SS2003	2	mg/kg	1.49 U	15.9	13.5	56

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
2	31021078N	--	E Thompson Ave	9/24/2020	MRS03-APN31021078N-SS001	0	mg/kg	1.44 U	11.4	32	40.4
					MRS03-APN31021078N-SS002	0	mg/kg	1.45 U	11.1	128	41.5
					MRS03-APN31021078N-SS003	0	mg/kg	1.42 U	11	153	42
					MRS03-APN31021078N-SS1001	1	mg/kg	1.47 U	13.6	15.7	46.6
					MRS03-APN31021078N-SS1002	1	mg/kg	1.45 U	13.8	15.5	45.2
					MRS03-APN31021078N-SS1003	1	mg/kg	1.36 U	13.7	16.7	46.5
					MRS03-APN31021078N-SS2001	2	mg/kg	1.49 U	13.4	11.2	47
					MRS03-APN31021078N-SS2002	2	mg/kg	1.41 U	4.71 U	8.76	10.1
					MRS03-APN31021078N-SS2003	2	mg/kg	1.43 U	14.8	11.8	51.2
3	31038002A	--	E Thompson Ave	9/29/2020	MRS03-APN31038002A-SS001	0	mg/kg	1.48 U	11.0	12.5	44.3
					MRS03-APN31038002A-SS002	0	mg/kg	1.44 U	9.60	10.5	36.3
					MRS03-APN31038002A-SS003	0	mg/kg	1.39 U	9.17	10.4	37.5
					MRS03-APN31038002A-SS1001	1	mg/kg	1.43 U	9.01	10.0	35.3
					MRS03-APN31038002A-SS1002	1	mg/kg	1.44 U	10.6	10.1	40.0
				9/30/2020	MRS03-APN31038002A-SS1003	1	mg/kg	1.40 U	7.92	38.5	32.9
				9/29/2020	MRS03-APN31038002A-SS2001	2	mg/kg	1.46 U	9.53	8.79	36.5
					MRS03-APN31038002A-SS2002	2	mg/kg	1.39 U	9.02	8.12	34.9
				9/30/2020	MRS03-APN31038002A-SS2003	2	mg/kg	1.45 U	9.17	8.64	36.6

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
3	31038002B	--	E Thompson Ave	10/20/2020	MRS03-APN31038002B-SS001	0	mg/kg	1.49 UJ	12.2	14.7	47.8 J
					MRS03-APN31038002B-SS002	0	mg/kg	1.45 U	13.5	14.7	48.7
					MRS03-APN31038002B-SS003	0	mg/kg	1.40 U	11.1	12.7	43.6
					MRS03-APN31038002B-SS1001	1	mg/kg	1.42 U	15.4	16.2	54.1
				10/21/2020	MRS03-APN31038002B-SS1002	1	mg/kg	1.44 U	15.1	54.3	52.3
					MRS03-APN31038002B-SS1003	1	mg/kg	1.42 U	13.3	12.9	48.4
				10/20/2020	MRS03-APN31038002B-SS2001	2	mg/kg	1.44 U	15.7	13.3	54.6
				10/21/2020	MRS03-APN31038002B-SS2002	2	mg/kg	1.43 U	14.2	12.4	50.7
					MRS03-APN31038002B-SS2003	2	mg/kg	1.41 U	14.1	11.7	51.3
3	31038002C	--	E Thompson Ave	9/28/2020	MRS03-APN31038002C-SS001	0	mg/kg	1.46 U	6.65	7.35	27.2
					MRS03-APN31038002C-SS002	0	mg/kg	1.42 U	9.06	10.6	36.1
					MRS03-APN31038002C-SS003	0	mg/kg	1.45 U	11.2	32.7	43.5
				9/29/2020	MRS03-APN31038002C-SS1001	1	mg/kg	1.47 U	11.2	11.6	39.5
					MRS03-APN31038002C-SS1002	1	mg/kg	1.43 UJ	10.4 J	11.4 J	39.5
					MRS03-APN31038002C-SS1003	1	mg/kg	1.50 U	12.5	11.1	45.4
					MRS03-APN31038002C-SS2001	2	mg/kg	1.49 U	10.6	10.2	40.0
					MRS03-APN31038002C-SS2002	2	mg/kg	1.49 U	11.1	10.2	41.5
					MRS03-APN31038002C-SS2003	2	mg/kg	1.43 U	11.3	10.6	42.1

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
3	31038002D	--	E Thompson Ave	9/24/2020	MRS03-APN31038002D-SS001	0	mg/kg	1.13 J	11.8	11.4	37.0
					MRS03-APN31038002D-SS002	0	mg/kg	1.45 U	10.7	10.2	39.5
					MRS03-APN31038002D-SS003	0	mg/kg	1.45 U	9.91	10.1	39.5
					MRS03-APN31038002D-SS1001	1	mg/kg	1.36 U	10.5	9.72	40.2
					MRS03-APN31038002D-SS1002	1	mg/kg	1.44 U	11.6	10.1	43.1
				9/25/2020	MRS03-APN31038002D-SS1003	1	mg/kg	1.50 U	11.1	10.1	42.0
				9/24/2020	MRS03-APN31038002D-SS2001	2	mg/kg	1.45 UJ	10.6 J	9.20 J	38.1 J
					MRS03-APN31038002D-SS2002	2	mg/kg	1.41 U	11.0	10.1 J	41.2
				9/25/2020	MRS03-APN31038002D-SS2003	2	mg/kg	1.42 U	11.2	10.5 J	41.6
3	31038002E	--	E Thompson Ave	10/8/2020	MRS03-APN31038002E-SS001	0	mg/kg	1.37 U	13.3	21.2	49.4
					MRS03-APN31038002E-SS002	0	mg/kg	1.45 U	12.7	21.7	48.9
					MRS03-APN31038002E-SS003	0	mg/kg	1.48 U	13.1	88.4	50.3
					MRS03-APN31038002E-SS1001	1	mg/kg	1.37 U	16.0	42.4	54.7
					MRS03-APN31038002E-SS1002	1	mg/kg	1.47 U	17.8	18.7	60.1
				10/9/2020	MRS03-APN31038002E-SS1003	1	mg/kg	1.47 U	18.5	16.9	62.1
				10/8/2020	MRS03-APN31038002E-SS2001	2	mg/kg	1.41 U	16.0	12.4	57.5
					MRS03-APN31038002E-SS2002	2	mg/kg	1.44 U	16.0	18.4	58.0
				10/9/2020	MRS03-APN31038002E-SS2003	2	mg/kg	1.40 U	16.3	12.1	58.4

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
3	31038002F	--	E Thompson Ave	10/14/2020	MRS03-APN31038002F-SS001	0	mg/kg	1.46 U	11.7	12.0	45.8
					MRS03-APN31038002F-SS002	0	mg/kg	1.49 U	11.2	12.4	45.6
					MRS03-APN31038002F-SS003	0	mg/kg	1.45 U	11.9	12.5	45.5
					MRS03-APN31038002F-SS1001	1	mg/kg	1.43 U	13.6	13.5	50.4
					MRS03-APN31038002F-SS1002	1	mg/kg	1.50 U	12.3	11.5	47.7
					MRS03-APN31038002F-SS1003	1	mg/kg	1.43 U	13.1	11.9	50.1
					MRS03-APN31038002F-SS2001	2	mg/kg	1.43 U	14.5	12.3	53.6
					MRS03-APN31038002F-SS2002	2	mg/kg	1.38 U	13.0	11.3	49.4
					MRS03-APN31038002F-SS2003	2	mg/kg	1.41 U	14.2	12.0	51.5
3	31038002G	--	E Thompson Ave	10/13/2020	MRS03-APN31038002G-SS001	0	mg/kg	1.38 U	12.4	11.7	48.8
					MRS03-APN31038002G-SS002	0	mg/kg	1.47 U	12.5	11.5	47.2
					MRS03-APN31038002G-SS003	0	mg/kg	1.48 UJ	14.3	13.7	55.0
					MRS03-APN31038002G-SS1001	1	mg/kg	1.41 U	12.4	10.9	46.9
					MRS03-APN31038002G-SS1002	1	mg/kg	1.46 U	11.8	10.7	44.9
					MRS03-APN31038002G-SS1003	1	mg/kg	1.47 U	12.6	11.6	49.3
					MRS03-APN31038002G-SS2001	2	mg/kg	1.41 U	13.8	12.0	49.9
					MRS03-APN31038002G-SS2002	2	mg/kg	1.44 U	13.7	11.8	50.3
					MRS03-APN31038002G-SS2003	2	mg/kg	1.47 U	14.1	12.1	53.0

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
3	31038002H	--	E Thompson Ave	10/20/2020	MRS03-APN31038002H-SS001	0	mg/kg	1.49 U	11.8	11.3	47.5
					MRS03-APN31038002H-SS002	0	mg/kg	1.46 U	11.9	11.4	48.1
					MRS03-APN31038002H-SS003	0	mg/kg	1.47 U	11.7	11.1	46.0
					MRS03-APN31038002H-SS1001	1	mg/kg	1.49 U	10.9	9.97	42.2
					MRS03-APN31038002H-SS1002	1	mg/kg	1.46 U	12.3	13.7	46.8
					MRS03-APN31038002H-SS1003	1	mg/kg	1.44 U	12.0	11.4	46.1
					MRS03-APN31038002H-SS2001	2	mg/kg	1.49 U	10.8	9.77	40.2
					MRS03-APN31038002H-SS2002	2	mg/kg	1.42 U	12.4	11.0	45.9
					MRS03-APN31038002H-SS2003	2	mg/kg	1.47 U	12.1	11.7	45.0
3	31038002I	--	E Thompson Ave	10/14/2020	MRS03-APN31038002I-SS001	0	mg/kg	1.39 U	13.1	16.1	48.5
					MRS03-APN31038002I-SS002	0	mg/kg	1.48 UJ	13.3	52.4 J	49.4 J
					MRS03-APN31038002I-SS003	0	mg/kg	1.47 U	12.6	65.3	45.7
				10/15/2020	MRS03-APN31038002I-SS1001	1	mg/kg	1.44 U	17.6	14.5	58.4
					MRS03-APN31038002I-SS1002	1	mg/kg	1.42 U	16.6	14.0	55.2
					MRS03-APN31038002I-SS1003	1	mg/kg	1.49 U	17.3	17.0	57.7
					MRS03-APN31038002I-SS2001	2	mg/kg	1.38 U	17.4	12.9	61.3
					MRS03-APN31038002I-SS2002	2	mg/kg	1.44 U	17.5	12.6	59.3
					MRS03-APN31038002I-SS2003	2	mg/kg	1.39 U	17.1	12.8	60.2

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
3	31038002J	--	E Thompson Ave	10/15/2020	MRS03-APN31038002J-SS001	0	mg/kg	1.45 U	47.1	15.3	66.8
					MRS03-APN31038002J-SS002	0	mg/kg	1.39 U	14.0	39.4	48.6
					MRS03-APN31038002J-SS003	0	mg/kg	1.42 U	13.6	14.4	49.2
					MRS03-APN31038002J-SS1001	1	mg/kg	1.49 U	18.2	91.5	59.9
					MRS03-APN31038002J-SS1002	1	mg/kg	1.43 U	17.7	14.1	58.7
				12/15/2020	MRS03-APN31038002J-SS1003R	1	mg/kg	1.49 U	17.3	12.9	54.6
				10/15/2020	MRS03-APN31038002J-SS2001	2	mg/kg	1.49 U	18.7	13.5	64.8
					MRS03-APN31038002J-SS2002	2	mg/kg	1.39 U	18.5	12.9	62.5
				10/16/2020	MRS03-APN31038002J-SS2003	2	mg/kg	1.42 U	18.6	13.2	63.3
3	31038002K	--	E Thompson Ave	10/7/2020	MRS03-APN31038002K-SS001	0	mg/kg	1.39 U	12.5	13.4	46.3
					MRS03-APN31038002K-SS002	0	mg/kg	1.45 UJ	12.2	13.4 J	45.3 J
					MRS03-APN31038002K-SS003	0	mg/kg	1.47 U	12.6	14.8	45.9
					MRS03-APN31038002K-SS1001	1	mg/kg	1.45 U	14.8	12.0	51.7
					MRS03-APN31038002K-SS1002	1	mg/kg	1.40 U	16.3	12.7	54.0
					MRS03-APN31038002K-SS1003	1	mg/kg	1.46 U	16.8	12.9	54.9
					MRS03-APN31038002K-SS2001	2	mg/kg	1.45 U	14.8	12.0	52.3
					MRS03-APN31038002K-SS2002	2	mg/kg	1.43 U	16.9	12.7	57.0
					MRS03-APN31038002K-SS2003	2	mg/kg	1.45 U	17.2	12.6	57.5

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
3	31038002L	--	E Thompson Ave	10/5/2020	MRS03-APN31038002L-SS001	0	mg/kg	1.49 U	14.6	13.8	49.4
					MRS03-APN31038002L-SS002	0	mg/kg	1.48 U	14.0	13.0	50.4
					MRS03-APN31038002L-SS003	0	mg/kg	1.42 U	12.3	11.7	45.4
				10/6/2020	MRS03-APN31038002L-SS1001	1	mg/kg	1.47 U	14.0	11.8	49.3
					MRS03-APN31038002L-SS1002	1	mg/kg	1.44 U	14.5	11.7	49.2
					MRS03-APN31038002L-SS1003	1	mg/kg	1.47 U	15.9	13.1	54.6
					MRS03-APN31038002L-SS2001	2	mg/kg	1.47 UJ	14.2	11.0 J	48.6
					MRS03-APN31038002L-SS2002	2	mg/kg	1.46 U	16.2	11.9	54.7
					MRS03-APN31038002L-SS2003	2	mg/kg	1.49 U	16.7	12.5	57.1
3	31038002M	--	E Thompson Ave	10/1/2020	MRS03-APN31038002M-SS001	0	mg/kg	1.45 U	11.6	11.3	42.9
					MRS03-APN31038002M-SS002	0	mg/kg	1.46 U	11.6	11.2	43.9
					MRS03-APN31038002M-SS003	0	mg/kg	7.40 UJ	24.7 U	11.0	49.4
					MRS03-APN31038002M-SS1001	1	mg/kg	1.46 U	11.3	10.3	42.0
					MRS03-APN31038002M-SS1002	1	mg/kg	1.48 U	11.4	9.68	42.5
				10/2/2020	MRS03-APN31038002M-SS1003	1	mg/kg	7.28 U	24.3 U	10.1	50.9
				10/1/2020	MRS03-APN31038002M-SS2001	2	mg/kg	7.31 U	24.4 U	10.3	58.2
					MRS03-APN31038002M-SS2002	2	mg/kg	6.89 U	23.0 U	9.68	54.9
				10/2/2020	MRS03-APN31038002M-SS2003	2	mg/kg	7.04 U	23.5 U	9.77	57.3

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
3	31038002N	--	E Thompson Ave	10/8/2020	MRS03-APN31038002N-SS001	0	mg/kg	7.24 U	12.9 J	13.6	50.3
					MRS03-APN31038002N-SS002	0	mg/kg	7.03 U	13.8 J	15.5	52.4
					MRS03-APN31038002N-SS003	0	mg/kg	7.04 U	13.4 J	14.0	52.5
					MRS03-APN31038002N-SS1001	1	mg/kg	1.40 UJ	15.0	11.6	51.9
					MRS03-APN31038002N-SS1002	1	mg/kg	1.49 U	16.0	11.9	54.8
					MRS03-APN31038002N-SS1003	1	mg/kg	1.46 U	15.6	12.0	53.6
					MRS03-APN31038002N-SS2001	2	mg/kg	1.45 U	17.3	12.5	62.3
					MRS03-APN31038002N-SS2002	2	mg/kg	1.47 U	17.8	12.7	61.6
					MRS03-APN31038002N-SS2003	2	mg/kg	1.48 U	16.9	12.2	59.4
3	31038002O	--	E Thompson Ave	10/6/2020	MRS03-APN31038002O-SS001	0	mg/kg	1.45 U	104	12.8	48.0
					MRS03-APN31038002O-SS002	0	mg/kg	1.45 U	13.1	12.8	48.0
					MRS03-APN31038002O-SS003	0	mg/kg	1.43 U	17.0	18.2	49.4
					MRS03-APN31038002O-SS1001	1	mg/kg	1.48 U	17.4	13.0	57.8
					MRS03-APN31038002O-SS1002	1	mg/kg	1.45 U	17.0	12.6	56.4
				10/7/2020	MRS03-APN31038002O-SS1003	1	mg/kg	1.48 U	16.9	12.5	56.0
				10/6/2020	MRS03-APN31038002O-SS2001	2	mg/kg	1.47 U	17.8	13.2	61.5
					MRS03-APN31038002O-SS2002	2	mg/kg	1.39 U	15.8	11.9	53.8
				10/7/2020	MRS03-APN31038002O-SS2003	2	mg/kg	1.41 U	16.3	12.2	55.4

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
3	31038002P	--	E Thompson Ave	9/30/2020	MRS03-APN31038002P-SS003	0	mg/kg	1.42 U	12.7	11.5	44.9
				10/12/2020	MRS03-APN31038002P-SS001R	0	mg/kg	1.46 U	12.1	11.2	45.6
					MRS03-APN31038002P-SS002R	0	mg/kg	1.40 UJ	11.4	11.7	43.9
				9/30/2020	MRS03-APN31038002P-SS1001	1	mg/kg	1.38 U	12.1	11.7	43.1
					MRS03-APN31038002P-SS1002	1	mg/kg	1.38 U	11.8	10.8	42.3
				10/1/2020	MRS03-APN31038002P-SS1003	1	mg/kg	1.47 U	12.3	11.1	44.9
				9/30/2020	MRS03-APN31038002P-SS2001	2	mg/kg	1.46 U	14.1	11.4	49.9
					MRS03-APN31038002P-SS2002	2	mg/kg	1.48 U	14.8	12.5	51.8
				10/1/2020	MRS03-APN31038002P-SS2003	2	mg/kg	1.44 U	13.4	11.0	47.4
3	31038002Q	--	E Thompson Ave	10/21/2020	MRS03-APN31038002Q-SS001	0	mg/kg	1.45 U	8.30	7.70	32.6
					MRS03-APN31038002Q-SS002	0	mg/kg	1.38 U	9.06	8.50	35.7
					MRS03-APN31038002Q-SS003	0	mg/kg	1.49 U	8.83	8.49	35.2
					MRS03-APN31038002Q-SS1001	1	mg/kg	1.47 U	10.4	8.35	38.2
					MRS03-APN31038002Q-SS1002	1	mg/kg	1.47 U	11.4	8.90	40.1
				10/22/2020	MRS03-APN31038002Q-SS1003	1	mg/kg	1.47 U	10.0	8.02	35.8
				10/21/2020	MRS03-APN31038002Q-SS2001	2	mg/kg	1.43 U	12.2	8.88	41.5
					MRS03-APN31038002Q-SS2002	2	mg/kg	1.42 U	12.1	9.21	42.9
				10/22/2020	MRS03-APN31038002Q-SS2003	2	mg/kg	1.44 U	12.6	9.27	43.4

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
4	31040005A	--	E Thompson Ave	10/22/2020	MRS03-APN31040005A-SS001	0	mg/kg	1.48 U	11.4	11.9	44.4
					MRS03-APN31040005A-SS002	0	mg/kg	1.40 U	11	11.1	42.8
					MRS03-APN31040005A-SS003	0	mg/kg	1.45 U	10.4	38.2	41.6
					MRS03-APN31040005A-SS1001	1	mg/kg	1.44 U	10.7	9.24	40
					MRS03-APN31040005A-SS1002	1	mg/kg	1.37 UJ	11.4 J	9.72 J	41.1 J
					MRS03-APN31040005A-SS1003	1	mg/kg	1.41 U	10.2	8.37	37.8
					MRS03-APN31040005A-SS2001	2	mg/kg	1.45 U	10.4	8.49	39.4
					MRS03-APN31040005A-SS2002	2	mg/kg	1.47 U	11.1	8.79	41.1
					MRS03-APN31040005A-SS2003	2	mg/kg	1.39 U	11.5	9.01	41.6
4	31040005B	--	E Thompson Ave	10/22/2020	MRS03-APN31040005B-SS001	0	mg/kg	1.43 UJ	9.99 J	10.0 J	40.9 J
					MRS03-APN31040005B-SS002	0	mg/kg	1.37 U	10.1	9.92	41.2
					MRS03-APN31040005B-SS003	0	mg/kg	1.45 U	10.5	14.3	43.4
					MRS03-APN31040005B-SS1001	1	mg/kg	1.39 U	11.1	9.6	42.6
					MRS03-APN31040005B-SS1002	1	mg/kg	1.38 U	11.1	9.37	42.1
				10/23/2020	MRS03-APN31040005B-SS1003	1	mg/kg	1.37 U	11.9	10	44.7
				10/22/2020	MRS03-APN31040005B-SS2001	2	mg/kg	1.45 U	12.2	10.3	46.7
					MRS03-APN31040005B-SS2002	2	mg/kg	1.45 U	12	9.71	45.3
				10/23/2020	MRS03-APN31040005B-SS2003	2	mg/kg	1.48 U	12.7	9.91	47.4

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
4	31040005C	--	E Thompson Ave	10/27/2020	MRS03-APN31040005C-SS001	0	mg/kg	1.45 U	11.3	11.1	43.4
					MRS03-APN31040005C-SS002	0	mg/kg	1.40 U	10.5	10.3	40.4
					MRS03-APN31040005C-SS003	0	mg/kg	1.46 U	11.5	10.9	43.4
					MRS03-APN31040005C-SS1001	1	mg/kg	1.48 U	14.9	11.7	51.3
					MRS03-APN31040005C-SS1002	1	mg/kg	1.42 U	14.5	11.5	50.5
					MRS03-APN31040005C-SS1003	1	mg/kg	1.37 U	15.1	11.9	52.7
					MRS03-APN31040005C-SS2001	2	mg/kg	1.36 U	16	11.9	55.5
					MRS03-APN31040005C-SS2002	2	mg/kg	1.46 U	16.3	12.1	56.5
					MRS03-APN31040005C-SS2003	2	mg/kg	1.46 U	16.3	11.9	55.8
4	31040005D	--	E Thompson Ave	10/27/2020	MRS03-APN31040005D-SS001	0	mg/kg	1.38 U	12.1	11.2	45.5
					MRS03-APN31040005D-SS002	0	mg/kg	1.48 U	12.3	11.3	46.6
					MRS03-APN31040005D-SS003	0	mg/kg	1.37 UJ	12.2	11.2	45.1 J
					MRS03-APN31040005D-SS1001	1	mg/kg	1.40 U	17.2	12.7	57.1
				10/28/2020	MRS03-APN31040005D-SS1002	1	mg/kg	1.45 U	14.8	11.2	51.2
					MRS03-APN31040005D-SS1003	1	mg/kg	1.47 U	15.3	11.9	53.5
				10/27/2020	MRS03-APN31040005D-SS2001	2	mg/kg	1.45 U	17.9	13	60.3
				10/28/2020	MRS03-APN31040005D-SS2002	2	mg/kg	1.40 U	16.8	12.5	57.1
					MRS03-APN31040005D-SS2003	2	mg/kg	1.40 U	14.8	11.5	52

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
4	31040005E	--	E Thompson Ave	10/28/2020	MRS03-APN31040005E-SS001	0	mg/kg	1.48 U	11.1	10.6	41.5
					MRS03-APN31040005E-SS002	0	mg/kg	1.47 U	10.8	10.5	41.7
					MRS03-APN31040005E-SS003	0	mg/kg	1.38 U	11.3	11	43.6
					MRS03-APN31040005E-SS1001	1	mg/kg	1.37 U	13.3	11.2	46.6
					MRS03-APN31040005E-SS1002	1	mg/kg	1.46 U	13.8	10.8	46.9
					MRS03-APN31040005E-SS1003	1	mg/kg	1.42 UJ	12.7	10.2	44.7
					MRS03-APN31040005E-SS2001	2	mg/kg	1.42 U	12.9	11.4	48.8
					MRS03-APN31040005E-SS2002	2	mg/kg	1.42 U	14.4	11.7	50.8
					MRS03-APN31040005E-SS2003	2	mg/kg	1.43 U	13	11	47.6
4	31040005F	--	E Thompson Ave	10/29/2020	MRS03-APN31040005F-SS001	0	mg/kg	1.43 U	10.3	10.5	40.9
					MRS03-APN31040005F-SS002	0	mg/kg	1.45 U	10.1	10.5	40.6
					MRS03-APN31040005F-SS003	0	mg/kg	1.45 U	10.1	10.5	39.2
					MRS03-APN31040005F-SS1001	1	mg/kg	1.47 U	13.8	11.4	47.3
					MRS03-APN31040005F-SS1002	1	mg/kg	1.42 U	12.7	10.8	44.6
					MRS03-APN31040005F-SS1003	1	mg/kg	1.41 U	13.1	11	45.4
					MRS03-APN31040005F-SS2001	2	mg/kg	1.40 U	13.5	11	46.6
					MRS03-APN31040005F-SS2002	2	mg/kg	1.44 U	13.2	11	47.2
					MRS03-APN31040005F-SS2003	2	mg/kg	1.46 U	13.6	11.3	48.1

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
4	31040005G	--	E Thompson Ave	10/29/2020	MRS03-APN31040005G-SS001	0	mg/kg	1.42 U	8.43	9.59	34
					MRS03-APN31040005G-SS002	0	mg/kg	1.48 UJ	9.35	10.6 J	36.4 J
					MRS03-APN31040005G-SS003	0	mg/kg	1.46 U	8.96	9.77	35.2
					MRS03-APN31040005G-SS1001	1	mg/kg	1.43 U	11.8	12.7	41.2
					MRS03-APN31040005G-SS1002	1	mg/kg	1.49 U	10.8	10.2	39.1
				10/30/2020	MRS03-APN31040005G-SS1003	1	mg/kg	1.47 U	12	10.1	41.9
				10/29/2020	MRS03-APN31040005G-SS2001	2	mg/kg	1.42 U	12.9	10.1	43.3
					MRS03-APN31040005G-SS2002	2	mg/kg	1.50 U	12.8	10.5	43.8
				10/30/2020	MRS03-APN31040005G-SS2003	2	mg/kg	1.47 U	12.8	9.93	43.4
4	31040005H	--	E Thompson Ave	11/3/2020	MRS03-APN31040005H-SS001	0	mg/kg	1.45 U	10.2	9.72	40
					MRS03-APN31040005H-SS002	0	mg/kg	1.43 U	9.41	9	37.5
					MRS03-APN31040005H-SS003	0	mg/kg	1.39 U	9.59	9.49	37.1
					MRS03-APN31040005H-SS1001	1	mg/kg	1.48 U	12.1	10	42.4
					MRS03-APN31040005H-SS1002	1	mg/kg	1.40 U	13.8	10.7	47
					MRS03-APN31040005H-SS1003	1	mg/kg	1.49 U	13.2	10.5	44.5
					MRS03-APN31040005H-SS2001	2	mg/kg	1.49 U	15	12	52
					MRS03-APN31040005H-SS2002	2	mg/kg	1.45 U	13.9	10.9	48.2
					MRS03-APN31040005H-SS2003	2	mg/kg	1.39 U	14.9	11.5	50.9

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
4	31040005I	--	E Thompson Ave	11/3/2020	MRS03-APN31040005I-SS001	0	mg/kg	1.49 UJ	9.95	9.27	39.3 J
					MRS03-APN31040005I-SS002	0	mg/kg	1.49 U	8.92	9	37.2
					MRS03-APN31040005I-SS003	0	mg/kg	1.47 U	8.98	8.46	35.5
					MRS03-APN31040005I-SS1001	1	mg/kg	1.45 U	10.1	8.47	38.7
				11/4/2020	MRS03-APN31040005I-SS1002	1	mg/kg	1.45 U	9.74	8.51	38.1
					MRS03-APN31040005I-SS1003	1	mg/kg	1.45 U	8.89	7.82	35
				11/3/2020	MRS03-APN31040005I-SS2001	2	mg/kg	1.44 U	10.7	8.83	40
				11/4/2020	MRS03-APN31040005I-SS2002	2	mg/kg	1.39 U	8.88	7.51	34.8
					MRS03-APN31040005I-SS2003	2	mg/kg	1.45 U	9.42	7.88	36.6
4	31040005J	--	E Thompson Ave	11/4/2020	MRS03-APN31040005J-SS001	0	mg/kg	1.40 U	8.47	8.21	35.1
					MRS03-APN31040005J-SS002	0	mg/kg	1.46 U	9.58	8.4	38.7
					MRS03-APN31040005J-SS003	0	mg/kg	1.42 U	9.31	8.12	36.4
					MRS03-APN31040005J-SS1001	1	mg/kg	1.46 U	10.7	8.94	39.8
					MRS03-APN31040005J-SS1002	1	mg/kg	1.47 U	9.59	8.98	36.6
					MRS03-APN31040005J-SS1003	1	mg/kg	1.46 U	9.15	7.93	35.7
					MRS03-APN31040005J-SS2001	2	mg/kg	1.46 U	9.73	9.22	36.8
					MRS03-APN31040005J-SS2002	2	mg/kg	1.46 U	10.5	8.98	38.8
					MRS03-APN31040005J-SS2003	2	mg/kg	1.46 U	10.5	8.39	38.8

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
4	31040005K	--	E Thompson Ave	11/5/2020	MRS03-APN31040005K-SS001	0	mg/kg	1.46 UJ	12	10.3	45.3 J
					MRS03-APN31040005K-SS002	0	mg/kg	1.40 U	9.85	9.66	38.2
					MRS03-APN31040005K-SS003	0	mg/kg	1.43 U	10.2	9.71	40
					MRS03-APN31040005K-SS1001	1	mg/kg	1.46 U	14.4	11.7	47.8
					MRS03-APN31040005K-SS1002	1	mg/kg	1.41 U	13.7	10.2	46.8
					MRS03-APN31040005K-SS1003	1	mg/kg	1.50 U	13.9	10.5	47.6
					MRS03-APN31040005K-SS2001	2	mg/kg	1.45 U	15.2	11.5	51
					MRS03-APN31040005K-SS2002	2	mg/kg	1.38 U	14	6.83	46.8
					MRS03-APN31040005K-SS2003	2	mg/kg	1.42 U	14.7	9.25	48.5
4	31040005L	--	E Thompson Ave	11/5/2020	MRS03-APN31040005L-SS001	0	mg/kg	6.96 U	23.2 U	12.6 J	58.6
					MRS03-APN31040005L-SS002	0	mg/kg	1.44 U	12.4	11.7 J	44
					MRS03-APN31040005L-SS003	0	mg/kg	1.47 U	13.2	13.2 J	46.6
					MRS03-APN31040005L-SS1001	1	mg/kg	1.45 U	12	13.7 J	47.7
				11/6/2020	MRS03-APN31040005L-SS1003	1	mg/kg	1.48 U	10.6	10.1	42.2
					MRS03-APN31040005L-SS1002	1	mg/kg	1.39 U	11	14.4 J	43.9
				11/5/2020	MRS03-APN31040005L-SS2001	2	mg/kg	7.38 UJ	24.6 U	13.8 J	66.7
				11/6/2020	MRS03-APN31040005L-SS2003	2	mg/kg	1.47 U	14.5	13.5 J	48.8
					MRS03-APN31040005L-SS2002	2	mg/kg	1.46 U	13.8	13.8 J	48.2

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
4	31040005M	--	E Thompson Ave	11/18/2020	MRS03-APN31040005M-SS001	0	mg/kg	1.47 U	11.3	10.2	44.3
					MRS03-APN31040005M-SS002	0	mg/kg	1.47 U	11.3	9.77	43.7
					MRS03-APN31040005M-SS003	0	mg/kg	1.48 U	11.4	10.2	44.6
					MRS03-APN31040005M-SS1001	1	mg/kg	1.40 U	14.1	9.89	48.5
					MRS03-APN31040005M-SS1002	1	mg/kg	1.42 U	13.1	9.64	46.1
					MRS03-APN31040005M-SS1003	1	mg/kg	1.45 U	12.7	9.32	45.4
					MRS03-APN31040005M-SS2001	2	mg/kg	1.37 U	13.4	9.34	46.7
					MRS03-APN31040005M-SS2002	2	mg/kg	1.45 U	13.2	9.28	46.1
					MRS03-APN31040005M-SS2003	2	mg/kg	1.49 U	12.7	9.1	45.6
4	31040005N	--	E Thompson Ave	11/19/2020	MRS03-APN31040005N-SS001	0	mg/kg	1.47 U	10.5	10.7	41.7
					MRS03-APN31040005N-SS002	0	mg/kg	1.39 UJ	11.5	11.2	46.5
					MRS03-APN31040005N-SS003	0	mg/kg	1.47 U	10.8	11.1	43.3
					MRS03-APN31040005N-SS1001	1	mg/kg	1.48 U	13.6	10.5	48.6
					MRS03-APN31040005N-SS1002	1	mg/kg	1.43 U	11.6	10	43.2
					MRS03-APN31040005N-SS1003	1	mg/kg	1.43 U	12	9.45	45.3
					MRS03-APN31040005N-SS2001	2	mg/kg	1.45 U	13.1	10.2	49.9
					MRS03-APN31040005N-SS2002	2	mg/kg	1.45 U	12.1	9.57	45.7
					MRS03-APN31040005N-SS2003	2	mg/kg	1.47 U	13	10.4	47.5

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
4	31040005O	--	E Thompson Ave	11/19/2020	MRS03-APN31040005O-SS001	0	mg/kg	1.49 U	22.3	10	36.2
					MRS03-APN31040005O-SS002	0	mg/kg	1.44 U	9.61	11	37.2
					MRS03-APN31040005O-SS003	0	mg/kg	1.44 U	10.6	10.9	38.9
					MRS03-APN31040005O-SS1001	1	mg/kg	1.38 UJ	13.6	11.2 J	47.6 J
					MRS03-APN31040005O-SS1002	1	mg/kg	1.45 U	14.3	10.9	48.6
				11/20/2020	MRS03-APN31040005O-SS1003	1	mg/kg	1.49 U	15.4	11.5	51.6
				11/19/2020	MRS03-APN31040005O-SS2001	2	mg/kg	1.46 U	14.4	10.3	49.5
					MRS03-APN31040005O-SS2002	2	mg/kg	1.44 U	14.8	11.3	51.4
				11/20/2020	MRS03-APN31040005O-SS2003	2	mg/kg	1.41 U	14.9	11.1	51.9
5	32404082B	3800	E. Shaeffer Ave.	3/30/2021	MRS03-APN324040482B-SS001	0	mg/kg	1.49 U	17.5	10.2	73.3
					MRS03-APN324040482B-SS002	0	mg/kg	1.47 U	16.4	17.3	72.6
					MRS03-APN324040482B-SS003	0	mg/kg	1.45 U	17.1	10.3	74.3
					MRS03-APN324040482B-SS1001	1	mg/kg	1.49 U	14.6	10.4	49.2
					MRS03-APN324040482B-SS1002	1	mg/kg	1.49 UJ	14.9	11.2	59.2
					MRS03-APN324040482B-SS1003	1	mg/kg	1.46 U	19.9	10.5	46.6
					MRS03-APN324040482B-SS2001	2	mg/kg	1.46 U	11.9	9.56	43.7
					MRS03-APN324040482B-SS2002	2	mg/kg	1.44 U	12.3	9.64	43.9
					MRS03-APN324040482B-SS2003	2	mg/kg	1.42 U	12.0	9.51	42.6

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
6	32404126	3970	E. Shaeffer Ave.	1/20/2021	MRS03-APN32404126-SS001	0	mg/kg	1.46 U	21.0	19.5	105
					MRS03-APN32404126-SS002	0	mg/kg	1.49 U	20.7	19.5	109
					MRS03-APN32404126-SS003	0	mg/kg	1.50 U	20.2	20.0	126
					MRS03-APN32404126-SS1001	1	mg/kg	1.49 U	12.8	12.5	60.0
					MRS03-APN32404126-SS1002	1	mg/kg	1.44 U	14.1	12.4	56.9
					MRS03-APN32404126-SS1003	1	mg/kg	1.39 U	15.6	11.7	127
					MRS03-APN32404126-SS2001	2	mg/kg	1.48 U	13.3	11.0	50.8
					MRS03-APN32404126-SS2002	2	mg/kg	1.43 U	14.4	11.1	50.4
					MRS03-APN32404126-SS2003	2	mg/kg	1.49 U	14.0	11.3	57.4
7	32404127	3966	E. Shaeffer Ave.	1/21/2021	MRS03-APN32404127-SS001	0	mg/kg	1.40 U	18.8	23.4	125
					MRS03-APN32404127-SS002	0	mg/kg	1.38 U	18.9	22.6	129
					MRS03-APN32404127-SS003	0	mg/kg	1.44 U	19.2	22.6	114
					MRS03-APN32404127-SS1001	1	mg/kg	1.49 U	14.9	13.5	56.7
					MRS03-APN32404127-SS1002	1	mg/kg	1.37 U	16.6	14.8	65.6
					MRS03-APN32404127-SS1003	1	mg/kg	1.37 U	16.2	27.6	66.7
					MRS03-APN32404127-SS2001	2	mg/kg	1.46 U	14.6	12.0	52.3
					MRS03-APN32404127-SS2002	2	mg/kg	1.47 U	14.8	12.0	57.6
					MRS03-APN32404127-SS2003	2	mg/kg	1.48 U	14.9	12.8	53.6

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
8	32404131	3946	E. Shaeffer Ave.	1/19/2021	MRS03-APN32404131-SS001	0	mg/kg	1.45 U	17.6	19.7	97.0
					MRS03-APN32404131-SS002	0	mg/kg	1.42 U	18.4	18.4	92.0
					MRS03-APN32404131-SS003	0	mg/kg	1.37 U	17.8	18.0	92.7
					MRS03-APN32404131-SS1001	1	mg/kg	1.38 U	13.4	12.2	56.0
					MRS03-APN32404131-SS1002	1	mg/kg	1.46 U	14.0	12.1	55.4
					MRS03-APN32404131-SS1003	1	mg/kg	1.37 U	14.2	12.2	55.1
					MRS03-APN32404131-SS2001	2	mg/kg	1.42 X	13.1	10.3 J	48.0 J
					MRS03-APN32404131-SS2002	2	mg/kg	1.37 U	13.4	10.2	47.8
					MRS03-APN32404131-SS2003	2	mg/kg	1.38 U	13.1	10.4	47.9
9	32404152_153	3905_09	E L John Avenue	3/9/2021	MRS03-APN32404152_53-SS001	0	mg/kg	1.45 U	18.9	16.9	86.9
					MRS03-APN32404152_53-SS002	0	mg/kg	1.45 U	21.9	16.6	83.6
					MRS03-APN32404152_53-SS003	0	mg/kg	1.40 U	16.6	19.1	74.3
					MRS03-APN32404152_53-SS1001	1	mg/kg	1.46 U	18.6	13.4	65.9
					MRS03-APN32404152_53-SS1002	1	mg/kg	1.39 U	15.0	12.5	59.6
					MRS03-APN32404152_53-SS1003	1	mg/kg	1.47 U	17.0	14.5	58.9
					MRS03-APN32404152_53-SS2001	2	mg/kg	6.85 U	22.8	15.4	68.7
					MRS03-APN32404152_53-S2S002	2	mg/kg	1.47 U	15.7	15.9	57.6
					MRS03-APN32404152_53-SS2003	2	mg/kg	6.82 UJ	22.7	15.6	69.3

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
10	32404194	3974	E. Devlin Ave.	2/11/2021	MRS03-APN32404194-SS001	0	mg/kg	1.46 U	21.9	10.1	70.4
					MRS03-APN32404194-SS002	0	mg/kg	1.46 U	17.3	9.41	55.5
					MRS03-APN32404194-SS003	0	mg/kg	1.48 U	15.3	9.1	61.1
					MRS03-APN32404194-SS1001	1	mg/kg	1.44 U	15.0	10.8	51.2
					MRS03-APN32404194-SS1002	1	mg/kg	1.44 U	264.0	12.1	58.3
					MRS03-APN32404194-SS1003	1	mg/kg	1.40 U	15.5	12.0	54.9
					MRS03-APN32404194-SS2001	2	mg/kg	1.47 UJ	13.1	10.6	47.3 J
					MRS03-APN32404194-SS2002	2	mg/kg	1.48 U	16.1	10.2	46.7
					MRS03-APN32404194-SS2003	2	mg/kg	1.45 U	12.2	9.65	43.4
11	32404549A	3970	E. HearneAve.	3/10/2021	MRS03-APN32404549A-SS001	0	mg/kg	1.44 U	13.3	19.1	90.9
					MRS03-APN32404549A-SS002	0	mg/kg	1.42 U	13.2	19.3	88.9
					MRS03-APN32404549A-SS003	0	mg/kg	1.46 U	13.0	20.9	83.5
					MRS03-APN32404549A-SS1001	1	mg/kg	1.49 U	14.3	11.8	54.8
					MRS03-APN32404549A-SS1002	1	mg/kg	1.47 U	14.2	10.3	52.3
					MRS03-APN32404549A-SS1003	1	mg/kg	1.47 U	10.8	9.27	41.7
					MRS03-APN32404549A-SS2001	2	mg/kg	1.45 U	12.0	9.20	44.2
					MRS03-APN32404549A-SS2002	2	mg/kg	1.38 U	11.1	8.97	40.6
					MRS03-APN32404549A-SS2003	2	mg/kg	1.37 U	10.6	8.74	39.8

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
12	32404558*	3920	E HearneAve	2/26/2020	MRS03-APN32404558-SS001R	0	mg/kg	1.43 U	55.4	34.6	122
					MRS03-APN32404558-SS002R	0	mg/kg	1.49 U	18.3	30.8	111
					MRS03-APN32404558-SS003R	0	mg/kg	1.46 UJ	19.2	34.5 J	133
					MRS03-APN32404558-SS1001R	1	mg/kg	1.49 U	14.1	56.0	66.7
					MRS03-APN32404558-SS1002R	1	mg/kg	1.42 U	14.6	36.5	63.1
					MRS03-APN32404558-SS1003R	1	mg/kg	1.39 U	15.3	38.7	66.8
					MRS03-APN32404558-SS2001R	2	mg/kg	1.44 U	14.4	17.9	55.8
					MRS03-APN32404558-SS2002R	2	mg/kg	1.43 U	14.4	12.7	52.5
					MRS03-APN32404585-SS2003R	2	mg/kg	1.45 U	14.4	16.1	53.0
13	32404588	3975	E. Devlin Ave.	2/26/2020	MRS03-APN32404588-SS001	0	mg/kg	1.46 U	13.9	11.0	63.0
					MRS03-APN32404588-SS002	0	mg/kg	1.46 U	19.5	10.7	67.5
					MRS03-APN32404588-SS003	0	mg/kg	1.45 U	12.1	10.2	65.7
					MRS03-APN32404588-SS1001	1	mg/kg	1.40 U	11.4	8.88	42.8
					MRS03-APN32404588-SS1002	1	mg/kg	1.36 UJ	12.2	9.28	44.0
					MRS03-APN32404588-SS1003	1	mg/kg	1.40 U	12.0	8.93	41.8
					MRS03-APN32404588-SS2001	2	mg/kg	1.41 U	12.8	11.7	44.7
					MRS03-APN32404588-SS2002	2	mg/kg	1.42 U	11.3	8.32	41.1
					MRS03-APN32404588-SS2003	2	mg/kg	1.47 U	11.4	8.26	40.4

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
14	32404589	3979	E. Devlin Ave.	1/13/2021	MRS03-APN32404589-SS001	0	mg/kg	1.44 UJ	20.4 J	10.8	63.2 J
					MRS03-APN32404589-SS002	0	mg/kg	1.38 U	18.5	10.2	60.5
					MRS03-APN32404589-SS003	0	mg/kg	1.43 U	16.3	10.6	61.1
					MRS03-APN32404589-SS1001	1	mg/kg	1.48 U	11.9	10.8	43.3
					MRS03-APN32404589-SS1002	1	mg/kg	1.49 U	14.5	11.4	48.4
					MRS03-APN32404589-SS1003	1	mg/kg	1.48 U	18.1	12.2	57.5
					MRS03-APN32404589-SS2001	2	mg/kg	1.42 U	14.8	11.3	50.7
					MRS03-APN32404589-SS2002	2	mg/kg	1.48 U	16.0	12.1	52.9
					MRS03-APN32404589-SS2003	2	mg/kg	1.47 U	19.3	11.8	57.5
15	32404663A	3945	E. Hearne Ave.	4/8/2021	MRS03-32404663A-SS001	0	mg/kg	1.38 U	16.4	74.3	76.4
					MRS03-32404663A-SS002	0	mg/kg	1.37 U	13.1	29.4	74.1
					MRS03-32404663A-SS003	0	mg/kg	1.44 U	22.0	112	78.4
					MRS03-32404663A-SS1001	1	mg/kg	1.46 U	13.1	23.0	49.9
					MRS03-32404663A-SS1002	1	mg/kg	1.41 U	14.1	27.9	51.5
					MRS03-32404663A-SS1003	1	mg/kg	1.46 U	14.4	29.6	58.4
					MRS03-32404663A-SS2001	2	mg/kg	1.48 U	14.9	16.4	55.7
					MRS03-32404663A-SS2002	2	mg/kg	1.39 U	13.2	11.4	45.7
					MRS03-32404663A-SS2003	2	mg/kg	1.49 UJ	14.0	16.3	121

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
16	32404668*	3979	E. Hearne Ave	2/20/2020	MRS03-APN32404668-SS001R	0	mg/kg	1.47 U	24.0	23.4	91.8
					MRS03-APN32404668-SS002R	0	mg/kg	1.43 U	17.6	19.4	81.9
					MRS03-APN32404668-SS003R	0	mg/kg	1.48 U	19.1	18.4	87.3
					MRS03-APN32404668-SS1001R	1	mg/kg	1.50 U	14.9	33.8	57.8
					MRS03-APN32404668-SS1002R	1	mg/kg	7.23 U	24.1 U	13.9	59.6
					MRS03-APN32404668-SS1003R	1	mg/kg	6.96 U	23.2 U	13.4	56.9
					MRS03-APN32404668-SS2001R	2	mg/kg	7.03 U	23.4 U	10.5 U	51.5
					MRS03-APN32404668-SS2002R	2	mg/kg	7.38 UJ	24.6 UJ	14.1 J	67.8 J
					MRS03-APN32404668-SS2003R	2	mg/kg	7.38 U	24.6 U	11.1 U	52.3
17	32405106	3846	E. Lum Ave.	2/4/2021	MRS03-APN32405106-SS001	0	mg/kg	1.47 U	11.3	10.6	47.7
					MRS03-APN32405106-SS002	0	mg/kg	1.46 U	11.5	10.3	46.2
					MRS03-APN32405106-SS003	0	mg/kg	1.46 U	10.9	10.7	47.5
					MRS03-APN32405106-SS1001	1	mg/kg	1.41 U	12.9	9.87	44.8
					MRS03-APN32405106-SS1002	1	mg/kg	1.44 U	10.8	8.49	40.1
					MRS03-APN32405106-SS1003	1	mg/kg	1.43 U	12.2	9.36	43.7
					MRS03-APN32405106-SS2001	2	mg/kg	1.49 U	12.7	9.78	44.8
					MRS03-APN32405106-SS2002	2	mg/kg	1.42 U	10.7	8.73	40
					MRS03-APN32405106-SS2003	2	mg/kg	1.40 U	11.9	9.05	42.5

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
18	32405107	3842	E. Lum Ave.	2/4/2021	MRS03-APN32405107-SS001	0	mg/kg	1.42 U	231	17.0	85.9
					MRS03-APN32405107-SS002	0	mg/kg	1.46 U	268	17.3	93.1
					MRS03-APN32405107-SS003	0	mg/kg	1.37 U	672	25.9	99.3
					MRS03-APN32405107-SS1001	1	mg/kg	1.38 U	28.7	12.1	54.7
					MRS03-APN32405107-SS1002	1	mg/kg	1.46 U	15.1	11.4	52.9
					MRS03-APN32405107-SS1003	1	mg/kg	1.49 UJ	17.7	12.8	60.7
					MRS03-APN32405107-SS2001	2	mg/kg	1.45 U	13.4	9.66	45.7
					MRS03-APN32405107-SS2002	2	mg/kg	1.44 U	12.2	9.42	43.4
					MRS03-APN32405107-SS2003	2	mg/kg	1.46 U	13.3	9.64	45.9
19	32405166A	4026	E. Lum Ave.	2/18/2021	MRS03-APN32405166A-SS001	0	mg/kg	1.44 U	88.7	15.3	96.9
					MRS03-APN32405166A-SS002	0	mg/kg	1.45 U	71.0	14.7	95.0
					MRS03-APN32405166A-SS003	0	mg/kg	1.50 U	39.9	15.2	92.5
					MRS03-APN32405166A-SS1001	1	mg/kg	7.44 UJ	24.8 U	13.3	71.1 J
					MRS03-APN32405166A-SS1002	1	mg/kg	7.49 U	25.0 U	13.0	76.2
					MRS03-APN32405166A-SS1003	1	mg/kg	1.48 U	32.2	9.69	45.7
					MRS03-APN32405166A-SS2001	2	mg/kg	7.44 U	24.8 U	13.6	76.6
					MRS03-APN32405166A-SS2002	2	mg/kg	7.32 U	24.4 U	13.1	78.4
					MRS03-APN32405166A-SS2003	2	mg/kg	7.41 U	24.7 U	14.4	80.2

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
20	32405263A*	4016	E. Thompson Ave.	1/21/2020	MRS03-APN32405263A-SS001R	0	mg/kg	1.46 U	16.2	20.6	95.5
					MRS03-APN32405263A-SS002R	0	mg/kg	1.47 U	16.7	18.6	96.3
					MRS03-APN32405263A-SS003R	0	mg/kg	1.50 U	18.5	17.3	87.3
					MRS03-APN32405263A-SS1001R	1	mg/kg	1.46 U	15.3	14.5	63.2
					MRS03-APN32405263A-SS1002R	1	mg/kg	1.50 UJ	15.1	12.8 J	59.9 J
					MRS03-APN32405263A-SS1003R	1	mg/kg	1.39 U	15.3	13.6	56.4
					MRS03-APN32405263A-SS2001R	2	mg/kg	1.48 U	15.6	11.1	54.3
					MRS03-APN32405263A-SS2002R	2	mg/kg	1.50 U	15.1	11.1	53.2
					MRS03-APN32405263A-SS2003R	2	mg/kg	1.45 U	16.8	12.0	57.6
21	32405265*	4008	E. Thompson Ave	1/22/2020	MRS-APN32405265-SS001R	0	mg/kg	1.49 U	18.8	27.9	109
					MRS-APN32405265-SS002R	0	mg/kg	1.45 U	16.9	25.9	102
					MRS-APN32405265-SS003R	0	mg/kg	1.47 U	18.9	29.1	113
					MRS-APN32405265-SS1001R	1	mg/kg	1.50 U	15.8	20.2	68.6
					MRS-APN32405265-SS1002R	1	mg/kg	1.37 U	15.3	18.6	61.2
					MRS-APN32405265-SS1003R	1	mg/kg	1.48 U	18.1	22.5	79.8
					MRS-AAPN32405265-SS2001R	2	mg/kg	1.41 U	15.4	11.5	55.4
					MRS-APN32405265-SS2002R	2	mg/kg	1.49 U	16.4	11.5	57.6
					MRS-AAPN32405265-SS2003R	2	mg/kg	1.42 U	17.2	14.5	59.4

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
22	32405267*	4000	E. Thompson Ave	2/19/2020	MRS-APN32405267-SS001R	0	mg/kg	1.46 U	15.1	44.9	85.1
					MRS-APN32405267-SS002R	0	mg/kg	1.49 U	15.0	44.2	87.6
					MRS-APN32405267-SS003R	0	mg/kg	1.49 U	16.4	43.0	82.2
					MRS-APN32405267-SS1001R	1	mg/kg	1.48 U	13.8	30.0	51.9
					MRS-APN32405267-SS1002R	1	mg/kg	1.47 U	12.9	94.9	47.4
					MRS-APN32405267-SS1003R	1	mg/kg	1.50 U	13.7	46.9	53.8
					MRS-APN32405267-SS2001R	2	mg/kg	1.47 U	13.8	12.1	49.9
					MRS-APN32405267-SS2002R	2	mg/kg	1.47 U	13.6	10.9	49.0
					MRS-APN32405267-SS2003R	2	mg/kg	1.41 U	13.9	10.5	48.8
23	32427024	3860	E. Snavely Ave.	4/7/2021	MRS-APN32427024-SS001	0	mg/kg	1.48 UJ	13.8 J	16.2 J	38.3 J
					MRS-APN32427024-SS002	0	mg/kg	1.46 UJ	23.1 J	16.3 J	43.0 J
					MRS-APN32427024-SS003	0	mg/kg	1.43 UJ	14.3 J	25.5 J	37.2 J
					MRS-APN32427024-SS1001	1	mg/kg	1.38 UJ	13.6 J	15.8 J	39.7 J
					MRS-APN32427024-SS1002	1	mg/kg	1.49 UJ	19.9 J	70.8 J	40.2 J
					MRS-APN32427024-SS1003	1	mg/kg	1.45 UJ	14.1 J	17.4 J	38.8 J
					MRS-APN32427024-SS2001	2	mg/kg	1.37 UJ	10.5 J	9.43 J	39.0 J
					MRS-APN32427024-SS2002	2	mg/kg	1.45 UJ	13.2 J	32.7 J	40.8 J
					MRS-APN32427024-SS2003	2	mg/kg	1.40 UJ	11.0 J	9.40 J	39.7 J

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
24	32436017	3966	E. Lass Ave.	2/2/2021	MRS-APN32436017-SS001	0	mg/kg	0.684 U	7.84	10.2	23.7
					MRS-APN32436017-SS002	0	mg/kg	0.741 U	8.73	40.3	26.0
					MRS-APN32436017-SS003	0	mg/kg	0.743 U	9.54	54.7	26.6
					MRS-APN32436017-SS1001	1	mg/kg	0.723 U	7.81	7.08	27.2
					MRS-APN32436017-SS1002	1	mg/kg	0.740 U	7.37	14.9	25.4
					MRS-APN32436017-SS1003	1	mg/kg	0.704 U	7.57	10.7	24.6
					MRS-APN32436017-SS2001	2	mg/kg	1.41 U	12.4	11.0	45.7
					MRS-APN32436017-SS2002	2	mg/kg	0.686 U	7.78	11.2	26.4
					MRS-APN32436017-SS2003	2	mg/kg	1.37 U	12.2	10.4	42.2
				3/3/1/2021	MRS-APN32436017-SS3001	3	mg/kg	1.47 U	12.5	10.5	47.9
					MRS-APN32436017-SS3002	3	mg/kg	1.48 U	13.4	10.7	50.6
					MRS-APN32436017-SS3003	3	mg/kg	1.43 U	12.5	10.1	47.1
					MRS-APN32436017-SS4001	4	mg/kg	1.49 U	9.80	8.43	38.5
					MRS-APN32436017-SS4002	4	mg/kg	1.39 U	10.1	8.84	39.8
					MRS-APN32436017-SS4003	4	mg/kg	1.40 U	10.4	8.70	39.9

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
25	32436028	3951	E. Lass Ave.	2/16-17/2020	MRS03-APN32436028-SS001	0	mg/kg	1.50 U	38.6	13.6	43.1
					MRS03-APN32436028-SS002	0	mg/kg	1.47 U	48.8	14.2	43.7
					MRS03-APN32436028-SS003	0	mg/kg	1.45 U	52.9	12.6	41.6
					MRS03-APN32436028-SS1001	1	mg/kg	1.39 U	14.1	10.4	39.8
					MRS03-APN32436028-SS1002	1	mg/kg	1.49 UJ	19.4	11.7	46.0
					MRS03-APN32436028-SS1003	1	mg/kg	1.38 U	13.9	13.3	42.5
					MRS03-APN32436028-SS2001	2	mg/kg	1.43 U	11.6	12.5	41.5
					MRS03-APN32436028-SS2002	2	mg/kg	1.49 U	12.9	10.7	44.7
					MRS03-APN32436028-SS2003	2	mg/kg	1.49 U	13.7	12.7	46.4
26	32436030	3943	E. Lass Ave.	2/9/2021	MRS03-APN32436030-SS001	0	mg/kg	1.49 U	12.4	9.84	41.1
					MRS03-APN32436030-SS002	0	mg/kg	1.47 U	14.8	10.9	45.2
					MRS03-APN32436030-SS003	0	mg/kg	1.46 U	12.9	10.2	44.6
					MRS03-APN32436030-SS1001	1	mg/kg	1.40 U	14.6	12.5	50.4
					MRS03-APN32436030-SS1002	1	mg/kg	1.44 U	15.8	11.9	52.6
					MRS03-APN32436030-SS1003	1	mg/kg	1.43 U	12.0	11.2	41.3
					MRS03-APN32436030-SS2001	2	mg/kg	1.45 X	13.5	12.0	47.1 J
					MRS03-APN32436030-SS2002	2	mg/kg	1.48 U	15.3	11.6	54.1
					MRS03-APN32436030-SS2003	2	mg/kg	1.43 U	15.9	13.2	54.8

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
27	32437017*	3968	E. Packard Ave.	1/22/2021	MRS03-APN32437017-SS001R	0	mg/kg	1.47 UJ	15.4 J	12.5 J	51.3 J
					MRS03-APN32437017-SS002R	0	mg/kg	1.46 UJ	15.9	12.9	53.3
				1/23/2021	MRS03-APN32437017-SS003R	0	mg/kg	1.49 UJ	16.3	12.9	53.5
					MRS03-APN32437017-SS1001R	1	mg/kg	1.46 UJ	16.7	13	56.3
					MRS03-APN32437017-SS1002R	1	mg/kg	1.39 UJ	16.6	12.3	56.4
					MRS03-APN32437017-SS1003R	1	mg/kg	1.50 UJ	16.5	12.2	54.9
					MRS03-APN32437017-SS2001R	2	mg/kg	1.44 UJ	17.3	12.7	59.0
					MRS03-APN32437017-SS2002R	2	mg/kg	1.42 UJ	14.6	11.1	53.1
					MRS03-APN32437017-SS2003R	2	mg/kg	1.50 UJ	16.8	12.3	57.8
28	32437019	3976	E. Packard Ave.	1/12/2021	MRS03-APN32437019-SS001	0	mg/kg	1.47 U	15.6	12.9	52.7
					MRS03-APN32437019-SS002	0	mg/kg	1.37 U	15.7	12.9	75.5
					MRS03-APN32437019-SS003	0	mg/kg	1.41 U	16.9	13.6	55.2
					MRS03-APN32437019-SS1001	1	mg/kg	1.49 U	17.1	14.2	56.1
					MRS03-APN32437019-SS1002	1	mg/kg	1.45 U	16.5	12.6	51.7
					MRS03-APN32437019-SS1003	1	mg/kg	1.49 U	16.5	12.8	52.2
					MRS03-APN32437019-SS2001	2	mg/kg	1.44 U	15.2	12.0	52.7
					MRS03-APN32437019-SS2002	2	mg/kg	1.43 U	15.1	11.7	52.0
					MRS03-APN32437019-SS2003	2	mg/kg	1.43 U	14.1	11.7	50.3

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
29	32439020*	3914	E. Snavely Ave.	3/5/2020	MRS03-APN32439020-SS001R	0	mg/kg	1.43 U	19.9	16.5	59.8
					MRS03-APN32439020-SS002R	0	mg/kg	1.42 U	19.0	17.7	59.7
					MRS03-APN32439020-SS003R	0	mg/kg	1.43 U	18.3	15.8	58.1
					MRS03-APN32439020-SS1001R	1	mg/kg	1.44 U	13.5	11.1	43
					MRS03-APN32439020-SS1002R	1	mg/kg	1.47 U	15.2	11.9	45.4
					MRS03-APN32439020-SS1003R	1	mg/kg	1.42 U	19.3	16.4	46.7
					MRS03-APN32439020-SS2001R	2	mg/kg	1.45 U	12.2	10.1	42.3
					MRS03-APN32439020-SS2002R	2	mg/kg	1.47 U	13.3	9.66	43.4
					MRS03-APN32439020-SS2003R	2	mg/kg	1.39 U	14.7	13.5	44.1
30	32439038	3927	E. Snavely Ave.	2/10/2021	MRS03-APN32439038-SS001	0	mg/kg	1.38 U	21.0	16.4	43.5
					MRS03-APN32439038-SS002	0	mg/kg	1.45 U	15.5	9.6	39.7
					MRS03-APN32439038-SS003	0	mg/kg	1.38 U	18.9	12.6	48.0
					MRS03-APN32439038-SS1001	1	mg/kg	1.39 U	13.2	10.8	45.3
					MRS03-APN32439038-SS1002	1	mg/kg	1.50 U	15.8	11.6	49.6
					MRS03-APN32439038-SS1003	1	mg/kg	1.44 U	13.9	11.8	46.9
					MRS03-APN32439038-SS2001	2	mg/kg	1.50 U	11.7	9.63	43.0
					MRS03-APN32439038-SS2002	2	mg/kg	1.44 U	11.7	9.39	41.8
					MRS03-APN32439038-SS2003	2	mg/kg	1.42 U	11.8	9.7	42.5

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (A)			10/15-16/2020	MRS03-Thomp A-SS001	0	mg/kg	1.49 UJ	11.8	12.8 J	45.3
					MRS03-Thomp A-SS002	0	mg/kg	1.47 U	12.5	12.2	47.9
					MRS03-Thomp A-SS003	0	mg/kg	1.46 U	12.9	12.6	50.4
					MRS03-Thomp A-SS1001	1	mg/kg	1.48 U	14.7	14.8	48
					MRS03-Thomp A-SS1002	1	mg/kg	1.38 U	14.6	16.5	46.7
					MRS03-Thomp A-SS1003	1	mg/kg	1.50 U	14.3	51.4	47.9
					MRS03-Thomp A-SS2001	2	mg/kg	1.48 U	15.2	11.4	52
					MRS03-Thomp A-SS2002	2	mg/kg	1.45 U	14.9	10.8	49.9
					MRS03-Thomp A-SS2003	2	mg/kg	1.39 U	15.4	11.2	51.6
31	Thompson Easement (B)			12/16/2020	MRS03-Thomp B-SS001	0	mg/kg	1.49 U	13.2	14.5	51.9
					MRS03-Thomp B-SS002	0	mg/kg	1.38 U	13.7	14.2	51.9
					MRS03-Thomp B-SS003	0	mg/kg	1.46 U	13.2	16.7	52.9
					MRS03-Thomp B-SS1001	1	mg/kg	1.47 U	13.3	20	45.4
					MRS03-Thomp B-SS1002	1	mg/kg	1.46 U	17.5	16	45.7
					MRS03-Thomp B-SS1003	1	mg/kg	1.48 U	13.5	25	46.2
					MRS03-Thomp B-SS2001	2	mg/kg	1.46 U	13.2	16.1	46.8
					MRS03-Thomp B-SS2002	2	mg/kg	1.47 U	13.4	10.2	45.2
					MRS03-Thomp B-SS2003	2	mg/kg	1.44 U	12.3	10.3	43.8

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (C)			12/17/2020	MRS03-Thomp C-SS001	0	mg/kg	1.42 U	12.4	12.6	48.7
					MRS03-Thomp C-SS002	0	mg/kg	1.49 UJ	16.1	17.1 J	55.8
					MRS03-Thomp C-SS003	0	mg/kg	1.48 U	13.2	13.9	51.6
					MRS03-Thomp C-SS1001	1	mg/kg	1.37 U	14.9	16	50.9
					MRS03-Thomp C-SS1002	1	mg/kg	1.40 U	15.4	19.1	50
				12/18/2020	MRS03-Thomp C-SS1003	1	mg/kg	1.47 U	16.5	14	49.5
				12/17/2020	MRS03-Thomp C-SS2001	2	mg/kg	1.43 U	14.4	11	49.8
					MRS03-Thomp C-SS2002	2	mg/kg	1.45 U	14.9	11.7	52.2
				12/18/2020	MRS03-Thomp C-SS2003	2	mg/kg	1.42 U	14.5	11.1	50.8
31	Thompson Easement (D)			1/5/2021	MRS03-Thomp D-SS001	0	mg/kg	1.40 U	9.85	27.7	40.3
					MRS03-Thomp D-SS002	0	mg/kg	1.46 U	14.0	9.14	31.7
					MRS03-Thomp D-SS003	0	mg/kg	1.43 U	10.8	13.5	44.3
					MRS03-Thomp D-SS1001	1	mg/kg	1.48 UJ	13.3	13.0	44.8
					MRS03-Thomp D-SS1002	1	mg/kg	1.38 U	12.4	12.7	42.5
					MRS03-Thomp D-SS1003	1	mg/kg	1.39 U	13.5	14.4	45.0
					MRS03-Thomp D-SS2001	2	mg/kg	1.45 U	13.4	10.4	48.0
					MRS03-Thomp D-SS2002	2	mg/kg	1.40 U	13.0	10.8	45.6
					MRS03-Thomp D-SS2003	2	mg/kg	1.44 U	13.8	10.7	48.3

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (E)			1/14/2021	MRS03-Thomp E-SS001	0	mg/kg	1.47 U	16.9	13.7	46.1
					MRS03-Thomp E-SS002	0	mg/kg	1.41 UJ	13.1	17.0	45.9 J
					MRS03-Thomp E-SS003	0	mg/kg	1.44 U	12.8	13.5	42.1
					MRS03-Thomp E-SS1001	1	mg/kg	1.44 U	12.5	16.5	42.8
					MRS03-Thomp E-SS1002	1	mg/kg	1.49 U	13.1	18.1	43.0
				1/15/2021	MRS03-Thomp E-SS1003	1	mg/kg	1.46 U	13.9	17.3	44.3
				1/14/2021	MRS03-Thomp E-SS2001	2	mg/kg	1.50 U	13.3	10.8	45.6
					MRS03-Thomp E-SS2002	2	mg/kg	1.45 U	13.6	10.6	45.2
				1/15/2021	MRS03-Thomp E-SS2003	2	mg/kg	1.41 U	12.7	10.3	44.4
31	Thompson Easement (F)			1/21/2021	MRS03-Thomp F-SS001	0	mg/kg	1.37 UJ	11.7	16.6	46.0 J
					MRS03-Thomp F-SS002	0	mg/kg	1.42 U	10.5	13.9	43.7
					MRS03-Thomp F-SS003	0	mg/kg	1.49 U	10.5	12.8	40.8
					MRS03-Thomp F-SS1001	1	mg/kg	1.41 U	12.2	17.0	43.4
					MRS03-Thomp F-SS1002	1	mg/kg	1.44 U	12.0	14.7	43.3
					MRS03-Thomp F-SS1003	1	mg/kg	1.37 U	11.9	13.6	42.9
					MRS03-Thomp F-SS2001	2	mg/kg	1.42 U	13.8	11.1	48.9
					MRS03-Thomp F-SS2002	2	mg/kg	1.40 U	14.0	11.4	49.5
				1/22/2021	MRS03-Thomp F-SS2003	2	mg/kg	1.40 U	13.8	11.2	49.3

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (G)			2/11/2021	MRS03-Thomp G-SS001	0	mg/kg	1.43 U	10.1	13.8	40.0
					MRS03-Thomp G-SS002	0	mg/kg	1.44 U	9.79	14.0	40.0
					MRS03-Thomp G-SS003	0	mg/kg	1.42 U	10.4	14.1	43.8
					MRS03-Thomp G-SS1001	1	mg/kg	1.39 U	11.5	13.4	43.3
					MRS03-Thomp G-SS1002	1	mg/kg	1.49 U	10.1	52.7	37.7
				2/12/2021	MRS03-Thomp G-SS1003	1	mg/kg	1.44 U	8.81	10.3	32.8
				2/11/2021	MRS03-Thomp G-SS2001	2	mg/kg	1.47 U	12.0	9.78	43.9
					MRS03-Thomp G-SS2002	2	mg/kg	1.46 U	11.6	9.34	42.3
				2/12/2003	MRS03-Thomp G-SS2003	2	mg/kg	1.42 U	13.0	10.3	46.7
31	Thompson Easement (H)			2/25/2021	MRS03-Thomp H-SS001	0	mg/kg	1.45 U	9.92	14.5	40.1
					MRS03-Thomp H-SS002	0	mg/kg	1.42 U	9.65	13.3	38.9
					MRS03-Thomp H-SS003	0	mg/kg	1.47 U	12.4	16.0	47.6
					MRS03-Thomp H-SS1001	1	mg/kg	1.48 U	11.5	12.9	40.4
					MRS03-Thomp H-SS1002	1	mg/kg	1.37 U	11.5	13.0	41.2
				2/26/2021	MRS03-Thomp H-SS1003	1	mg/kg	1.45 U	11.1	11.8	40.1
				2/25/2021	MRS03-Thomp H-SS2001	2	mg/kg	1.46 U	13.0	12.0	45.0
					MRS03-Thomp H-SS2002	2	mg/kg	1.42 U	13.0	12.1	44.1
				2/26/2021	MRS03-Thomp H-SS2003	2	mg/kg	1.45 U	12.6	10.3	43.4

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (I)			2/18/2021	MRS03-Thomp I-SS001	0	mg/kg	1.46 U	12.2	16.7	48.2
					MRS03-Thomp I-SS002	0	mg/kg	1.46 U	12.5	17.2	50.3
					MRS03-Thomp I-SS003	0	mg/kg	1.46 U	14.8	16.2	48.0
					MRS03-Thomp I-SS1001	1	mg/kg	7.24 U	24.1	74.9	70.1
				2/19/2021	MRS03-Thomp I-SS1002	1	mg/kg	1.45 U	13.2	22.3	45.6
					MRS03-Thomp I-SS1003	1	mg/kg	1.50 U	12.8	17.6	46.1
				2/18/2021	MRS03-Thomp I-SS2001	2	mg/kg	7.35 U	24.5 U	16.0	84.4
				2/19/2021	MRS03-Thomp I-SS2002	2	mg/kg	6.99 U	23.3 U	15.6	76.2
					MRS03-Thomp I-SS2003	2	mg/kg	7.48 U	24.9 U	15.9	80.6

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (J)			1/7/2021	MRS03-Thomp J-SS001	0	mg/kg	1.42 U	13.0	22.2	53.1
					MRS03-Thomp J-SS002	0	mg/kg	1.42 U	14.0	19.9	53.7
					MRS03-Thomp J-SS003	0	mg/kg	1.40 U	13.6	18.6	49.1
					MRS03-Thomp J-SS1001	1	mg/kg	1.39 U	14.2	37.3	49.9
					MRS03-Thomp J-SS1002	1	mg/kg	1.45 U	13.1	33.5	48.4
				1/8/2021	MRS03-Thomp J-SS1003	1	mg/kg	1.41 U	14.3	21.7	49.3
				1/7/2021	MRS03-Thomp J-SS2001	2	mg/kg	1.42 U	15.3	12.4	51.0
					MRS03-Thomp J-SS2002	2	mg/kg	1.48 U	15.1	12.0	50.2
				1/8/2021	MRS03-Thomp J-SS2003	2	mg/kg	1.37 U	14.1	11.3	48.3
				3/2/2021	MRS03-Thomp J-SS3001	3	mg/kg	1.50 U	11.1	9.69	41.9
					MRS03-Thomp J-SS3002	3	mg/kg	1.39 UJ	9.87	8.29 J	35.5
					MRS03-Thomp J-SS3003	3	mg/kg	1.37 U	10.6	9.53	40.1
					MRS03-Thomp J-SS4001	4	mg/kg	1.39 U	9.28	8.19	34.1
					MRS03-Thomp J-SS4002	4	mg/kg	1.40 U	9.12	8.20	34.5
					MRS03-Thomp J-SS4003	4	mg/kg	1.38 U	8.52	7.79	32.8
				4/1/2021	MRS03-Thomp J-SS5001	5	mg/kg	1.40 U	8.49	8.76	32.9
					MRS03-Thomp J-SS5002	5	mg/kg	1.36 U	8.27	8.64	32.6
				4/2/2021	MRS03-Thomp J-SS5003	5	mg/kg	1.39 U	7.74	7.99	29.4
				4/1/2021	MRS03-Thomp J-SS6001	6	mg/kg	1.45 U	12.0	9.46	39.6
					MRS03-Thomp J-SS6002	6	mg/kg	1.49 U	11.3	9.40	39.2
				4/2/2021	MRS03-Thomp J-SS6003	6	mg/kg	1.44 U	11.6	9.34	38.6

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (K)			1/6/2021	MRS03-Thomp K-SS001	0	mg/kg	1.45 U	12.6	34.0	49.9
					MRS03-Thomp K-SS002	0	mg/kg	1.50 U	13.1	40.0	53.7
					MRS03-Thomp K-SS003	0	mg/kg	1.45 U	13.3	39.5	51.8
				1/7/2021	MRS03-Thomp K-SS1001	1	mg/kg	1.46 U	14.1	52.3	50.7
					MRS03-Thomp K-SS1002	1	mg/kg	1.40 U	13.4	48.4	48.3
					MRS03-Thomp K-SS1003	1	mg/kg	1.47 UJ	17.0	46.6	58.2
					MRS03-Thomp K-SS2001	2	mg/kg	1.47 U	16.1	13.0	53.9
					MRS03-Thomp K-SS2002	2	mg/kg	1.50 U	16.1	13.5	53.3
					MRS03-Thomp K-SS2003	2	mg/kg	1.49 U	16.0	13.1	53.5
				2/16/2021	MRS03-Thomp K-SS3001	3	mg/kg	1.45U	12.2	11.2	45.4
					MRS03-Thomp K-SS3002	3	mg/kg	1.49 U	11.9	11.9	45.0
				2/17/2021	MRS03-Thomp K-SS3003	3	mg/kg	1.44 U	11.8	10.6	43.6
				2/16/2021	MRS03-Thomp K-SS4001	4	mg/kg	1.42 U	8.80	8.26	34.1
					MRS03-Thomp K-SS4002	4	mg/kg	1.42 U	8.36	7.85	32.6
				2/17/2020	MRS03-Thomp K-SS4003	4	mg/kg	1.49 U	8.62	8.08	34.1
				3/11/2021	MRS03-Thomp K-SS5001	5	mg/kg	1.40 U	7.65	8.00	31.0
					MRS03-Thomp K-SS5002	5	mg/kg	1.46 U	8.24	8.18	32.9
					MRS03-Thomp K-SS5003	5	mg/kg	1.39 UJ	7.60	8.51	31.8 J
					MRS03-Thomp K-SS6001	6	mg/kg	1.40 U	10.9	9.23	40.5
					MRS03-Thomp K-SS6002	6	mg/kg	1.40 U	10.2	8.66	36.0
					MRS03-Thomp K-SS6003	6	mg/kg	1.47 U	10.7	8.94	37.6

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (L)			1/6/2021	MRS03-Thomp L-SS001	0	mg/kg	1.44 U	14.0	30.5	53.9
					MRS03-Thomp L-SS002	0	mg/kg	1.41 U	12.7	90.3	51.4
					MRS03-Thomp L-SS003	0	mg/kg	1.37 U	13.4	68.2	51.7
					MRS03-Thomp L-SS1001	1	mg/kg	1.47 U	14.3	138	62.3
					MRS03-Thomp L-SS1002	1	mg/kg	1.50 U	14.3	65.0	57.2
					MRS03-Thomp L-SS1003	1	mg/kg	1.49 U	14.1	53.7	54.2
					MRS03-Thomp L-SS2001	2	mg/kg	1.46 U	15.4	14.6	53.2
					MRS03-Thomp L-SS2002	2	mg/kg	1.49 U	15.8	14.5	54.9
					MRS03-Thomp L-SS2003	2	mg/kg	1.48 U	14.6	13.3	51.5
				3/4/2021	MRS03-Thomp L-SS3001	3	mg/kg	1.46 U	11.1	10.9	52.4
					MRS03-Thomp L-SS3002	3	mg/kg	1.44 U	11.2	9.73	41.6
				3/52021	MRS03-Thomp L-SS3003	3	mg/kg	1.48 U	11.1	9.78	41.2
				3/4/2021	MRS03-Thomp L-SS4001	4	mg/kg	1.46 U	8.63	8.40	34.6
					MRS03-Thomp L-SS4002	4	mg/kg	1.49 U	7.89	7.38	31.7
				3/52021	MRS03-Thomp L-SS4003	4	mg/kg	1.40 U	8.10	7.57	31.8
				4/1/2021	MRS03-Thomp L-SS5001	5	mg/kg	1.45 U	8.80	9.13	34.1
					MRS03-Thomp L-SS5002	5	mg/kg	1.50 U	7.92	8.03	31.8
				4/2/2021	MRS03-Thomp L-SS5003	5	mg/kg	1.43 U	7.96	9.29	32.5
				4/1/2021	MRS03-Thomp L-SS6001	6	mg/kg	1.42 UJ	9.16	8.31	35.8
					MRS03-Thomp L-SS6002	6	mg/kg	1.42 U	7.82	7.83	31.0
				4/2/2021	MRS03-Thomp L-SS6003	6	mg/kg	1.44 U	7.49	7.76	31.0

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (M)			12/3/2020	MRS03-Thomp M-SS001	0	mg/kg	1.42 U	11.2	97.3	45.0
					MRS03-Thomp M-SS002	0	mg/kg	1.45 U	11.0	22.7	43.8
					MRS03-Thomp M-SS003	0	mg/kg	1.46 U	11.0	97.0	44.7
					MRS03-Thomp M-SS1001	1	mg/kg	1.46 U	14.2	32.5	51.4
					MRS03-Thomp M-SS1002	1	mg/kg	1.40 U	14.2	177	50.9
				12/4/2020	MRS03-Thomp M-SS1003	1	mg/kg	1.43 U	14.8	28.5	52.3
				12/3/2020	MRS03-Thomp M-SS2001	2	mg/kg	1.40 U	15.1	12.0	51.7
					MRS03-Thomp M-SS2002	2	mg/kg	1.40 U	15.4	12.6	53.9
				12/4/2020	MRS03-Thomp M-SS2003	2	mg/kg	1.47 U	14.8	49.5	51.5
				2/3/2021	MRS03-Thomp M-SS3001	3	mg/kg	1.40 U	11.1	9.68	41.4
					MRS03-Thomp M-SS3002	3	mg/kg	1.38 U	10.5	9.47	40.3
					MRS03-Thomp M-SS3003	3	mg/kg	1.38 U	10.7	9.40	40.4
					MRS03-Thomp M-SS4001	4	mg/kg	1.45 UJ	9.78	9.27	38.0
					MRS03-Thomp M-SS4002	4	mg/kg	1.37 U	8.43	8.56	33.1
					MRS03-Thomp M-SS4003	4	mg/kg	1.44 U	7.92	8.30	31.6
					MRS03-Thomp M-SS5001	5	mg/kg	1.44 U	6.83	7.31	28.0
				4/1/2021	MRS03-Thomp M-SS5002	5	mg/kg	1.45 U	7.84	7.62	28.7
					MRS03-Thomp M-SS5003	5	mg/kg	1.38 U	6.00	6.61	24.9
					MRS03-Thomp M-SS6001	6	mg/kg	1.43 U	6.71	7.28	27.7
					MRS03-Thomp M-SS6002	6	mg/kg	1.38 UJ	7.85	7.86	30.6
				4/2/2021	MRS03-Thomp M-SS6003	6	mg/kg	1.46 U	5.52	5.91	22.4

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (N)			12/3/2020	MRS03-Thomp N-SS001	0	mg/kg	1.43 U	11.3	20.8	43.7
					MRS03-Thomp N-SS002	0	mg/kg	1.47 U	11.2	94.4	44.1
					MRS03-Thomp N-SS003	0	mg/kg	1.45 U	12.0	20.9	43.2
					MRS03-Thomp N-SS1001	1	mg/kg	1.43 UJ	12.1	184	44.2
					MRS03-Thomp N-SS1002	1	mg/kg	1.43 U	12.6	113	45.4
					MRS03-Thomp N-SS1003	1	mg/kg	1.39 U	12.8	16.7	46.5
					MRS03-Thomp N-SS2001	2	mg/kg	1.44 U	11.7	62.9	43.3
					MRS03-Thomp N-SS2002	2	mg/kg	1.48 U	11.4	10.2	43.4
					MRS03-Thomp N-SS2003	2	mg/kg	1.49 U	12.2	13.1	45.8
				3/4/2021	MRS03-Thomp N-SS3001	3	mg/kg	1.45 U	7.93	7.93	31.3
					MRS03-Thomp N-SS3002	3	mg/kg	1.49 U	8.44	8.34	33.1
					MRS03-Thomp N-SS3003	3	mg/kg	1.42 U	8.07	7.67	32.7
					MRS03-Thomp N-SS4001	4	mg/kg	1.46 U	6.88	6.81	27.7
					MRS03-Thomp N-SS4002	4	mg/kg	1.43 UJ	8.90	8.26	33.4
					MRS03-Thomp N-SS4003	4	mg/kg	1.43 U	7.25	6.92	28.5

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (O)			12/2/2020	MRS03-Thomp O-SS001	0	mg/kg	1.50 U	10.4	18.0	37.6
					MRS03-Thomp O-SS002	0	mg/kg	1.45 U	9.82	75.4	38.2
					MRS03-Thomp O-SS003	0	mg/kg	1.49 U	9.73	45.1	39.2
					MRS03-Thomp O-SS1001	1	mg/kg	1.42 UJ	13.5	16.4	47.5
					MRS03-Thomp O-SS1002	1	mg/kg	1.46 U	13.5	21.0	48.3
					MRS03-Thomp O-SS1003	1	mg/kg	1.45 U	13.3	52.3	47.3
					MRS03-Thomp O-SS2001	2	mg/kg	1.42 U	12.3	10.2	44.9
					MRS03-Thomp O-SS2002	2	mg/kg	1.45 U	11.7	9.60	43.3
					MRS03-Thomp O-SS2003	2	mg/kg	1.39 U	11.5	9.49	42.2
31	Thompson Easement (P)			12/1/2020	MRS03-Thomp P-SS001	0	mg/kg	1.40 U	11.9	173	45.8
					MRS03-Thomp P-SS002	0	mg/kg	1.43 U	10.6	104	44.1
					MRS03-Thomp P-SS003	0	mg/kg	1.46 U	9.02	80.7	40.2
					MRS03-Thomp P-SS1001	1	mg/kg	1.42 U	13.4	20.5	49.2
					MRS03-Thomp P-SS1002	1	mg/kg	1.42 U	12.7	52.3	45.4
					MRS03-Thomp P-SS1003	1	mg/kg	1.48 U	12.4	86.3	45.5
					MRS03-Thomp P-SS2001	2	mg/kg	1.45 U	13.2	10.7	48.3
					MRS03-Thomp P-SS2002	2	mg/kg	1.49 U	10.8	9.67	39.7
					MRS03-Thomp P-SS2003	2	mg/kg	1.46 U	12.2	10.8	43.8

TABLE 4-5
SUMMARY OF METALS ANALYTICAL RESULTS -SOIL SAMPLES COLLECTED DURING RI ADDENDUM
(JANUARY 2020 TO APRIL 2021)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (feet)	Analytes	ANTIMONY	COPPER	LEAD	ZINC
							Screening Level (mg/kg)	**31.0**	**3,100**	**400**	**23,000**
							Units	mg/kg			
31	Thompson Easement (Q)			11/17/2020	MRS03-Thomp Q-SS001	0	mg/kg	1.38 U	12.1	54.7	47.6
					MRS03-Thomp Q-SS002	0	mg/kg	1.47 UJ	12.2	82.3	49.2
					MRS03-Thomp Q-SS003	0	mg/kg	1.42 U	11.6	68.6	47.1
					MRS03-Thomp Q-SS1001	1	mg/kg	1.48 U	13.6	15.4	48.4
					MRS03-Thomp Q-SS1002	1	mg/kg	1.42 U	13.2	43.3	48.6
					MRS03-Thomp Q-SS1003	1	mg/kg	1.49 U	14.2	18.3	49.3
					MRS03-Thomp Q-SS2001	2	mg/kg	1.37 U	13.5	9.96	47.9
					MRS03-Thomp Q-SS2002	2	mg/kg	1.38 U	13.9	9.66	49.9
					MRS03-Thomp Q-SS2003	2	mg/kg	1.37 U	14.5	10.1	50.5

Notes:
* parcel was resampled during the RI Addendum field activities due to rejected data in 2019 RI activities
(A) - letter designates that due to size of parcel, parcel was subdivided into sub-parcels or easement subdivision
APN - Assessor's Parcel Number
U - not detected above the limit of detection
UJ - estimated non-detect
X - rejected data
mg/kg - milligrams per kilogram

TABLE 4-6
JANUARY 2019 TO APRIL 2021 REMEDIAL INVESTIGATION PARCELS, SUMMARY OF POTENTIAL HEALTH IMPACTS

Assessors Parcel Number	Street Number	Street Name	Sampling Dates	Estimation of Potential Health Impacts					
				Surface Soil			All Depths		
				Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index
31021063*	--	E Thompson Ave	4/2/2019	6E-07	0.01	0.1	4E-07	0.01	0.1
31021078*	--	E Thompson Ave	3/28/2019	5E-07	0.01	0.2	4E-07	0.005	0.1
31021080	--	E Thompson Ave	5/7/2019	3E-08	0.01	0.0	2E-08	0.006	0.03
31021080A	--	E Thompson Ave	5/22/2019	**2E-06**	0.1	0.4	**2E-06**	0.09	0.4
31021080B	--	E Thompson Ave	5/23/2019	8E-07	0.02	0.1	8E-07	0.01	0.1
31038002	4015	E Thompson Ave	3/20/2019	4E-07	0.01	0.1	3E-07	0.008	0.1
32404206A	3910	E Devlin Ave	4/3/2019	1E-06	0.01	0.3	9E-07	0.01	0.2
32404208A	3900	E Devlin Ave	3/7/2019	1E-06	0.07	0.1	8E-07	0.05	0.1
32404211C	3879	E Shaeffer Ave	10/22/2019	7E-07	0.01	0.3	6E-07	0.01	0.2
32404213	3887	E Shaeffer Ave	5/14/2019	4E-07	0.01	0.1	N/A	N/A	N/A
32404241	3846	E Devlin Ave	2/6/2019	1E-07	0.01	0.0	1E-07	0.01	0.03
32404242	3842	E Devlin Ave	2/5/2019	2E-07	0.02	0.2	2E-07	0.01	0.1
32404277A	3825	E Shaeffer Ave	10/17/2019	**2E-06**	0.02	0.2	N/A	N/A	N/A
32404279	3841	E Shaeffer Ave	2/26/2019	9E-08	0.01	0.0	N/A	N/A	N/A
32404280	3845	E Shaeffer Ave	2/27/2019	1E-07	0.01	0.0	9E-08	0.01	0.03
32404487	3846	E Hearne Ave	3/6/2019	**2E-06**	0.03	0.0	N/A	N/A	N/A
32404526	3845	E Devlin Ave	2/8/2019	**6E-06**	0.03	0.0	**4E-06**	0.02	0.03
32404527	3849	E Devlin Ave	2/19/2019	**3E-06**	0.02	0.0	**2E-06**	0.02	0.03
32404550	3960	E Hearne Ave	2/19/2019	**9E-06**	0.05	0.1	**7E-06**	0.04	0.1
32404552A	3950	E Hearne Ave	2/7/2019	6E-07	0.01	0.1	5E-07	0.01	0.1
32404553	3946	E Hearne Ave	1/31/2019	1E-06	0.01	0.1	9E-07	0.01	0.1
32404556A	3922	E Hearne Ave	1/24/2019	**2E-06**	0.12	0.1	N/A	N/A	N/A
32404578	3925	E Devlin Ave	10/25/2019	**6E-06**	0.04	0.2	N/A	N/A	N/A
32404582	3945	E Devlin Ave	10/23/2019	**7E-06**	0.05	0.1	**5E-06**	0.03	0.1
32404624	3996	E Ryan Ave	4/16/2019	3E-07	0.01	0.0	2E-07	0.01	0.03
32404625	3990	E Ryan Ave	4/17/2019	2E-07	0.01	0.1	2E-07	0.01	0.1
32404629A	3966	E Ryan Ave	3/26/2019	1E-06	0.02	0.7	1E-06	0.01	0.5
32404631B	3960	E Ryan Ave	5/30/2019	5E-07	0.01	0.1	N/A	N/A	N/A
32404638	3920	E Ryan Ave	3/1/2019	**2E-06**	0.04	0.1	**2E-06**	0.03	0.1
32404639*	3916	E Ryan Ave	4/5/2019	**6E-06**	0.03	0.1	**4E-06**	0.02	0.1
32404640*	3910	E Ryan Ave	3/29/2019	**1E-04**	0.5	0.3	**3E-05**	0.20	0.1
32404656	3915	E Hearne Ave	1/25/2019	**2E-06**	0.02	0.04	N/A	N/A	N/A
32404658	3925	E Hearne Ave	1/29/2019	1E-06	0.01	0.3	1E-06	0.01	0.2

TABLE 4-6
JANUARY 2019 TO APRIL 2021 REMEDIAL INVESTIGATION PARCELS, SUMMARY OF POTENTIAL HEALTH IMPACTS

Assessors Parcel Number	Street Number	Street Name	Sampling Dates	Estimation of Potential Health Impacts					
				Surface Soil			All Depths		
				Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index
32404659	3929	E Hearne Ave	2/1/2019	1E-06	0.02	0.2	1E-06	0.01	0.2
32404664	3955	E Hearne Ave	10/16/2019	4E-07	0.01	0.05	N/A	N/A	N/A
32404665	3959	E Hearne Ave	1/30/2019	7E-07	0.01	0.1	5E-07	0.01	0.1
32404666	3971	E Hearne Ave	2/27/2019	**2E-06**	0.02	0.05	1E-06	0.02	0.05
32404688	3860	E Ryan Ave	3/8/2019	**4E-06**	0.02	0.05	**3E-06**	0.02	0.05
32404727	3831	E Hearne Ave	10/29/2019	7E-07	0.02	0.04	N/A	N/A	N/A
32404730	3845	E Hearne Ave	3/27/2019	4E-07	0.01	0.04	N/A	N/A	N/A
32405168	4010	E Lum Ave	3/5/2019	2E-07	0.01	0.05	N/A	N/A	N/A
32405169	4004	E Lum Ave	4/12/2019	3E-07	0.01	0.04	2E-07	0.01	0.04
32405172	3990	E Lum Ave	1/22/2019	**4E-06**	0.03	0.07	**3E-06**	0.02	0.06
32405174	3974	E Lum Ave	5/9/2019 10/24/19	5E-07	0.01	0.08	1E-06	0.01	0.06
32405176	3966	E Lum Ave	1/18/2019	**3E-06**	0.02	0.10	**2E-06**	0.02	0.10
32405177	3960	E Lum Ave	1/15/2019	5E-07	0.01	0.08	4E-07	0.01	0.07
32405178	3956	E Lum Ave	1/14/2019	**6E-06**	0.03	0.2	**4E-06**	0.02	0.1
32405206A	3929	E Ryan Ave	4/4/2019	**5E-06**	0.03	0.2	**4E-06**	0.02	0.1
32405212	3959	E Ryan Ave	3/22/2019	5E-07	0.01	0.2	4E-07	0.01	0.1
32405218A	3991	E Ryan Ave	5/30/2019	3E-07	0.01	0.04	N/A	N/A	N/A
32405269	3986	E Thompson Ave	10/17/2019	6E-08	0.02	0.04	5E-08	0.01	0.03
32405289	3886	E Thompson Ave	3/19/2019	7E-07	0.01	0.09	6E-07	0.01	0.08
32405290	3880	E Thompson Ave	3/20/2019	9E-07	0.01	0.1	N/A	N/A	N/A
32436008	3930	E Lass Ave	10/28/2019	**2E-06**	0.02	0.03	**2E-06**	0.01	0.03
32436011	3942	E Lass Ave	5/14/2019	**2E-06**	0.01	0.2	**2E-06**	0.01	0.1
32436012	3946	E Lass Ave	5/21/2019	**3E-06**	0.02	0.1	**2E-06**	0.02	0.1
32436019	3974	E Lass Ave	4/10/2019	**3E-05**	0.1	0.1	**2E-05**	0.08	0.2
32436020	3978	E Lass Ave	5/8/2019	**1E-05**	0.1	0.2	**7E-06**	0.04	0.1
32437016	3964	E Packard Ave	4/9/2019	1E-07	0.01	0.03	1E-07	0.01	0.03
32439031	3955	E Snavely Ave	5/29/2019 10/31/19	**7E-05**	0.3	0.1	**3E-05**	0.1	0.05
32439036	3935	E Snavely Ave	10/8/2019	**1E-05**	0.07	0.03	**8E-06**	0.05	0.04
32439037	3931	E Snavely Ave	10/9/2019	**3E-05**	0.1	0.02	**2E-05**	0.09	0.02

TABLE 4-6
JANUARY 2019 TO APRIL 2021 REMEDIAL INVESTIGATION PARCELS, SUMMARY OF POTENTIAL HEALTH IMPACTS

Assessors Parcel Number	Street Number	Street Name	Sampling Dates	Estimation of Potential Health Impacts					
				Surface Soil			All Depths		
				Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index
RI ADDENDUM (JANUARY 2020 TO APRIL 2021)									
31021063**	--	E Thompson Ave	4/2/2019	5E-07	0.01	0.1	4E-07	0.01	0.1
31021063 (A)			2/12-13/2020	4E-07	0.009	0.03	3E-07	0.009	0.03
31021063 (B)			1/23-24/2020	7E-07	0.01	0.04	6E-07	0.01	0.04
31021063 (C)			1/28/2020	4E-07	0.01	0.2	3E-07	0.01	0.1
31021063 (D)			1/28-29/2020	1E-06	0.01	0.04	8E-07	0.01	0.04
31021063 (E)			1/29/2020	6E-07	0.01	0.05	5E-07	0.01	0.04
31021063 (F)			1/30/2020	8E-07	0.01	0.05	6E-07	0.009	0.05
31021063 (G)			1/30-31/2020	8E-07	0.01	0.1	6E-07	0.01	0.1
31021063 (H)			2/11/2020	1E-06	0.01	0.2	1E-06	0.01	0.1
31021063 (I)			2/12-13/2020	1E-06	0.01	0.3	8E-07	0.01	0.2
31021063 (J)			2/13/2020	1E-06	0.01	0.3	9E-07	0.01	0.2
31021063 (K)			2/13-14/2020	9E-07	0.01	0.4	7E-07	0.01	0.3
31021078**	--	E Thompson Ave.	3/28/2019	4E-07	0.01	0.2	4E-07	0.005	0.1
31021078 (A)			2/18/2020	1E-06	0.01	0.3	9E-07	0.01	0.3
31021078 (B)**			9/15/2020 9/22/2020	8E-07	0.01	0.8	6E-07	0.01	0.5
31021078 (C)			2/25/2020	5E-07	0.01	0.3	4E-07	0.01	0.2
31021078 (D)			2/26-28/2020	7E-07	0.01	0.5	6E-07	0.009	0.3
31021078 (E)**			9/16/2020 9/22/2020	6E-07	0.01	0.4	5E-07	0.01	0.3
31021078 (F)			3/3/2020	4E-07	0.01	0.2	3E-07	0.009	0.2
31021078 (G)			3/4/2020	7E-07	0.01	0.2	5E-07	0.009	0.2
31021078 (H)			3/5-6/2020	8E-07	0.01	0.5	6E-07	0.01	0.4
31021078 (I)			9/17/2020	3E-07	0.01	0.4	3E-07	0.01	0.3
31021078 (J)			9/17-18/2020	7E-07	0.01	0.5	6E-07	0.01	0.4
31021078 (K)			9/21-22/2020 9/30/2020	6E-07	0.01	0.2	4E-07	0.01	0.1
31021078 (L)			9/22-23/2020	1E-06	0.01	0.07	8E-07	0.009	0.06
31021078 (M)			9/23/2020 9/30/2020	1E-06	0.01	0.3	8E-07	0.01	0.3
31021078 (N)			9/24/2020	3E-07	0.008	0.4	2E-07	0.009	0.3

TABLE 4-6
JANUARY 2019 TO APRIL 2021 REMEDIAL INVESTIGATION PARCELS, SUMMARY OF POTENTIAL HEALTH IMPACTS

Assessors Parcel Number	Street Number	Street Name	Sampling Dates	Estimation of Potential Health Impacts					
				Surface Soil			All Depths		
				Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index
31038002**	--	E Thompson Ave.	3/20/2019	4E-07	0.01	0.1	3E-07	0.008	0.1
31038002 (A)			9/29-30/2020	9E-08	0.006	0.09	8E-08	0.006	0.07
31038002 (B)			10/20-21/2020	2E-07	0.008	0.1	1E-07	0.008	0.09
31038002 (C)			9/28-29/2020	9E-08	0.007	0.08	8E-08	0.006	0.06
31038002 (D)			9/24-25/2020	6E-08	0.006	0.03	6E-08	0.006	0.03
31038002 (E)			10/8-9/2020	7E-07	0.01	0.2	5E-07	0.01	0.2
31038002 (F)			10/14/2020	7E-08	0.007	0.03	6E-08	0.007	0.03
31038002 (G)			10/13/2020	5E-08	0.007	0.03	6E-08	0.007	0.03
31038002 (H)			10/20/2020	6E-08	0.006	0.03	6E-08	0.006	0.03
31038002 (I)			10/14-15/2020	1E-07	0.009	0.2	1E-07	0.009	0.1
31038002 (J)			10/15-16/2020 12/15/2020	2E-07	0.02	0.2	1E-07	0.01	0.2
31038002 (K)			10/7/2020	1E-07	0.009	0.04	1E-07	0.009	0.04
31038002 (L)			10/5-6/2020	3E-07	0.009	0.04	2E-07	0.009	0.03
31038002 (M)			10/1-2/2020	8E-08	0.007	0.03	1E-07	0.007	0.03
31038002 (N)			10/8/2020	5E-07	0.01	0.04	4E-07	0.01	0.04
31038002 (O)			10/6-7/2020	1E-07	0.03	0.04	8E-08	0.03	0.04
31038002 (P)			9/30/2020 10/1/2020 10/12/2020	7E-08	0.006	0.03	7E-08	0.007	0.03
31038002 (Q)			10/21-22/2020	1E-07	0.006	0.02	8E-08	0.006	0.02

TABLE 4-6
JANUARY 2019 TO APRIL 2021 REMEDIAL INVESTIGATION PARCELS, SUMMARY OF POTENTIAL HEALTH IMPACTS

Assessors Parcel Number	Street Number	Street Name	Sampling Dates	Estimation of Potential Health Impacts					
				Surface Soil			All Depths		
				Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index
31040005 (A)	--	E Thompson Ave.	10/22/2020	8E-08	0.006	0.09	7E-08	0.006	0.07
31040005 (B)			10/22-23/2020	7E-08	0.006	0.03	7E-08	0.006	0.03
31040005 (C)			10/27/2020	7E-08	0.008	0.03	7E-08	0.008	0.03
31040005 (D)			10/27-28/2020	7E-08	0.008	0.03	7E-08	0.009	0.03
3104005 (E)			10/28/2020	1E-07	0.007	0.03	8E-08	0.007	0.03
31040005 (F)			10/29/2020	1E-07	0.007	0.03	9E-08	0.007	0.03
31040005 (G)			10/29-30/2020	1E-07	0.007	0.03	1E-07	0.007	0.03
31040005 (H)			11/3/2020 3/5/2020	1E-07	0.007	0.03	1E-07	0.008	0.03
31040005 (I)			11/3-4/2020	1E-07	0.006	0.02	1E-07	0.006	0.02
31040005 (J)			11/4/2020	7E-08	0.005	0.02	6E-08	0.005	0.02
31040005 (K)			11/5/2020	6E-07	0.01	0.03	4E-07	0.01	0.03
31040005 (L)			11/5-6/2020	1E-07	0.007	0.04	1E-07	0.008	0.04
31040005 (M)			11/18/2020	2E-07	0.008	0.03	1E-07	0.007	0.03
31040005 (N)			11/19/2020	1E-06	0.01	0.03	7E-07	0.01	0.03
31040005 (O)			11/19-20/2020	5E-07	0.01	0.03	4E-07	0.01	0.03
32404082B	3800	E Shaeffer Ave.	3/30/2021	7E-08	0.01	0.04	7E-08	0.01	0.04
32404126	3970	E Shaeffer Ave.	1/20/2021	2E-07	0.02	0.06	2E-07	0.01	0.05
32404127	3966	E. Shaeffer Ave.	1/21/2021	6E-07	0.02	0.08	5E-07	0.01	0.07
32404131	3946	E. Shaeffer Ave.	1/19/2021	2E-07	0.01	0.05	1E-07	0.01	0.05
32404152_153	3905_09	E L John Ave.	3/9/2021	3E-07	0.01	0.05	3E-07	0.01	0.05
32404194	3974	E. Devlin Ave.	2/11/2021	1E-07	0.08	0.03	1E-07	0.06	0.03
32004549A	3970	E. Hearne Ave.	3/10/2021	5E-07	0.01	0.06	4E-07	0.01	0.05
32404558**	3920	E. Hearne Ave.	2/26/2020	**2E-06**	0.03	0.1	**2E-06**	0.02	0.1
32404588	3975	E. Devlin Ave.	2/26/2020	7E-07	0.01	0.03	5E-07	0.01	0.03
32404589	3979	E. Devlin Ave.	1/13/2021	7E-08	0.01	0.03	7E-08	0.01	0.03

TABLE 4-6
JANUARY 2019 TO APRIL 2021 REMEDIAL INVESTIGATION PARCELS, SUMMARY OF POTENTIAL HEALTH IMPACTS

Assessors Parcel Number	Street Number	Street Name	Sampling Dates	Estimation of Potential Health Impacts					
				Surface Soil			All Depths		
				Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index
32404663A	3945	E. Hearne Ave.	4/8/2021	**9E-06**	0.05	0.3	**6E-06**	0.04	0.2
32404668**	3979	E. Hearne Ave.	2/20/2020	2E-07	0.01	0.08	2E-07	0.01	0.07
32405106	3846	E. Lum Ave.	2/4/2021	4E-07	0.008	0.03	3E-07	0.008	0.03
32405107	3842	E. Lum Ave.	2/4/2021	5E-07	0.2	0.06	4E-07	0.2	0.05
32405166A	4026	E. Lum Ave.	2/18/2021	2E-07	0.04	0.04	1E-07	0.03	0.04
32405263A**	4016	E. Thompson Ave.	1/21/2020	6E-07	0.01	0.05	5E-07	0.01	0.05
32405265**	4008	E. Thompson Ave.	1/22/2020	**3E-06**	0.02	0.08	**2E-06**	0.02	0.07
32405267**	4000	E. Thompson Ave.	2/19/2020	7E-07	0.01	0.2	6E-07	0.01	0.2
32427024	3860	E. Snavely Ave.	4/7/2021	9E-08	0.01	0.2	8E-08	0.009	0.1
32436017	3966	E. Lass Ave.	2/2/2021 3/31/2021	**2E-04**	0.8	0.1	**1E-04**	0.4	0.08
32436028	3951	E. Lass Ave.	2/16-17/2020	6E-07	0.02	0.04	6E-07	0.02	0.04
32436030	3943	E. Lass Ave.	2/9/2021	5E-07	0.01	0.03	4E-07	0.009	0.03
32437017**	3968	E. Packard Ave.	1/22-23/2020	2E-07	0.009	0.03	2E-07	0.009	0.03
32437019	3976	E. Packard Ave.	1/12/2021	2E-07	0.01	0.04	2E-07	0.009	0.03
32439020**	3914	E. Snavely Ave.	3/5/2020	7E-07	0.01	0.05	6E-07	0.01	0.05
32439038	3927	E. Snavely Ave.	2/10/2021	1E-06	0.02	0.04	1E-06	0.01	0.04

TABLE 4-6
JANUARY 2019 TO APRIL 2021 REMEDIAL INVESTIGATION PARCELS, SUMMARY OF POTENTIAL HEALTH IMPACTS

Assessors Parcel Number	Street Number	Street Name	Sampling Dates	Estimation of Potential Health Impacts					
				Surface Soil			All Depths		
				Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index
Thompson (A)	--	Thompson Easement	10/15-16/2020	7E-07	0.01	0.1	7E-07	0.01	0.09
Thompson (B)			12/16/2020	1E-06	0.01	0.06	1E-06	0.01	0.06
Thompson (C)			12/17-18/2020	1E-06	0.01	0.05	1E-06	0.01	0.05
Thompson (D)			1/5/2021	1E-06	0.01	0.07	1E-06	0.01	0.05
Thompson (E)			1/14-15/2021	**5E-06**	0.03	0.05	**4E-06**	0.02	0.05
Thompson (F)			1/21-22/2021	**6E-06**	0.03	0.04	**5E-06**	0.03	0.04
Thompson (G)			2/11-12/2021	**2E-05**	0.07	0.1	**1E-05**	0.06	0.09
Thompson (H)			2/25-26/2021	**3E-05**	0.1	0.04	**2E-05**	0.1	0.04
Thompson (I)			2/18-19/2021	**7E-05**	0.3	0.2	**6E-05**	0.3	0.1
Thompson (J)			1/7-8/2021 3/2/2021 4/1-2/2021	**1E-04**	0.6	0.1	**8E-05**	0.3	0.06
Thompson (K)			1/6-7/2021 2/16-17/2021 3/11/2021	**2E-04**	1	0.1	**1E-04**	0.5	0.09
Thompson (L)			1/6/2021 3/4-5/2021 4/1-2/2021	**5E-04**	**2**	0.3	**2E-04**	1	0.2
Thompson (M)			12/3-4/2020 4/1-2/2021	**2E-04**	0.9	0.5	**9E-05**	0.4	0.2
Thompson (N)			12/3/2020 3/4/2021	**7E-05**	0.3	0.5	**4E-05**	0.2	0.2
Thompson (O)			12/2/2020	**3E-05**	0.1	0.2	**2E-05**	0.1	0.2
Thompson (P)			12/1/2020	**2E-05**	0.08	0.4	**1E-05**	0.06	0.4
Thompson (Q)			11/17/2020	**1E-05**	0.06	0.2	**9E-06**	0.04	0.2

Bold = concentration of potential concern (COPC) concentrations resulting in estimated ILCR in excess of $1x10^{-6}$ or noncarcinogenic HQ greater than 1

* surface samples were collected in the 2014-2017 RI

'-- Sampled in open area

(A) - letter designates that due to size of parcel, parcel was subdivided into sub-parcels or easement subdivision

N/A - only surface soil detection necessary

** parcel was resampled during the RI Addendum field activities due to rejected data in 2019 RI activities

Ave - Avenue

ILCR - Incremental Lifetime Cancer Risk

ISM - Incremental sampling method

FIGURES

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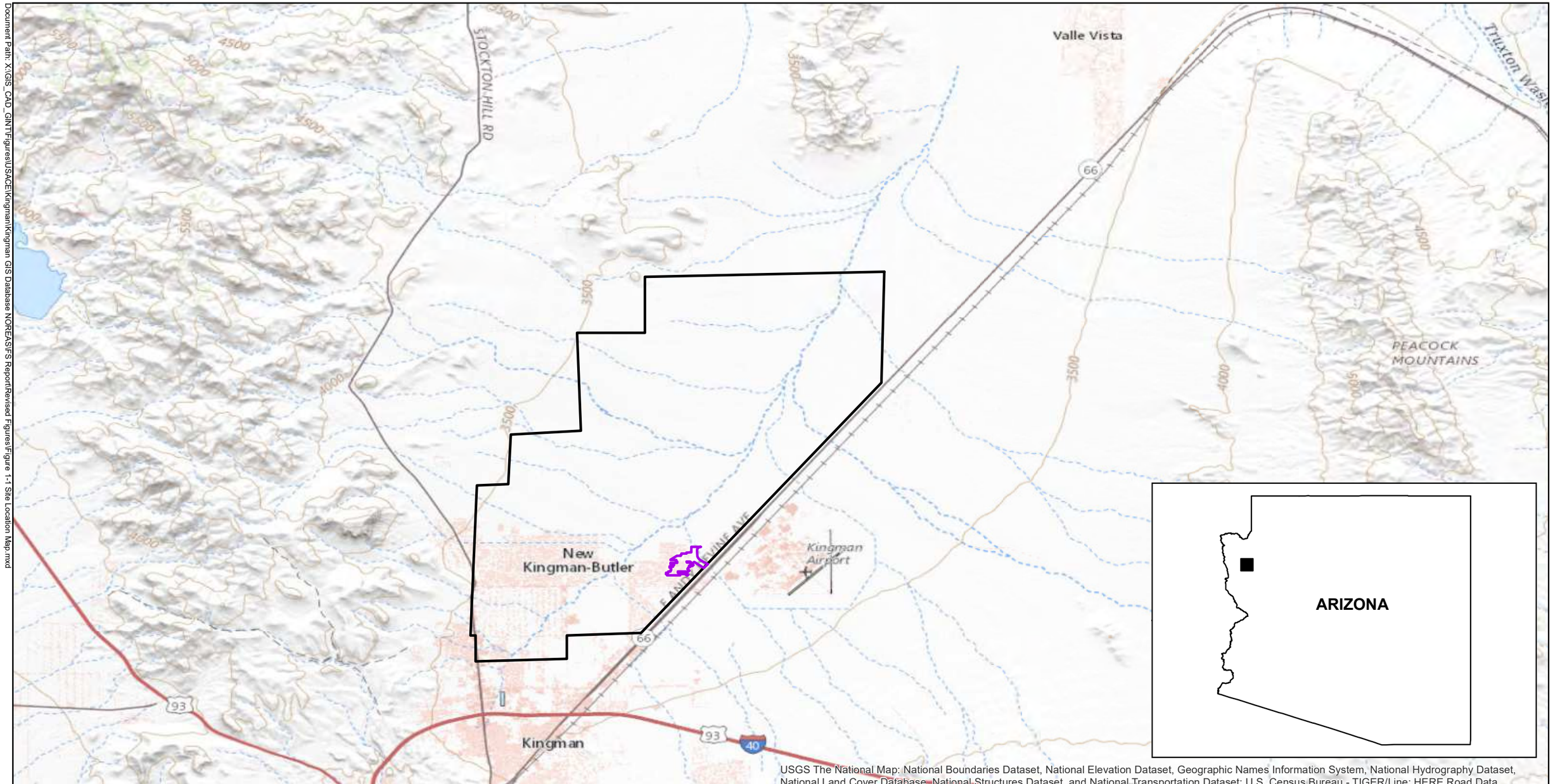


Legend

Kingman Ground-To-Ground Gunnery Range

MRS01-15 Skeet Shooting Ranges (Shotfall Zone Boundary)

Notes:
FS- feasibility study
RI- remedial investigation

N

0 1 2 4 Miles

UNITED STATES ARMY CORPS OF ENGINEERS

LOS ANGELES, CALIFORNIA

RI/FS FORMER SKEET RANGE MRS01
KINGMAN, ARIZONA

FIGURE 1-1

Site Location Map

NOREAS
Environmental Engineering and Science

Document Path: X:\GIS_CAD_GINT\Figures\USACE\Kingman\Kingman GIS Database NOREAS\FS Report\Revised Figures\Figure 1-1 Site Location Map.mxd

Parcels 31021063, 31021078, and 31008002 were sampled during the 2019 RI. Subparcels for the above listed parcels were sampled during the 2020 and 2021 Addendum RI.

*Parcel 32404643 was sampled at 2 feet bgs during theTCRA, and later was sampled at 3-foot and 4-foot depth intervals during the 2014-2017 RI field investigations.

Parcels 32404639 and 32404640 were investigated on the surface in the 2014 -2017 RI. The subsurface was investigated during the 2019 RI.

Note:
FS - feasibility study
RI - remedial investigations
TCRA - time critical removal action

Legend

- Investigated Area Boundary
- Parcel # and Address (e.g. 32405169 / 4004)
- Parcels Sampled 2014-2017 (Eco RI)
- Parcels Sampled during TCRA
- Parcels Sampled 2019 (NOREAS RI)
- Parcels Sampled 2020 and 2021 (NOREAS RI Addendum)

N

150 75 0 150 300 450 Feet

UNITED STATES ARMY CORPS OF ENGINEERS — LOS ANGELES, CALIFORNIA

RI/FS FORMER SKEET RANGE MRS01
KINGMAN, ARIZONA

FIGURE 2-1

Parcels Sampled During TCRA, RI, and RI Addendum (April 2013 to April 2021)

NOREAS

Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

X:\GIS_CAD_GIN\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\RI Addendum\Figure 3-1 Parcels Sampled During TCRA, 2014-2017 RI, 2019 RI and RI Addendum (April 2013 to April 2021).mxd

X:\GIS_CAD_GIN\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\RI_Addendum\Revised May 2022\Figure 4-1 Visually Observed Skeet Fragments (April 2013 to April 2021) Revised.mxd

Legend

- Investigated Area Boundary
- 32405169 / 4004 — Parcel # and Address
- TCRA 2013-2014 (Ahtna and Eco)
- Parcels Sampled 2014-2017 (Eco)
- Parcels Sampled 2019 RI (NOREAS)
- Parcels Sampled 2020-2021 RI Addendum (NOREAS)
- Skeet Fragments Observed*
- Skeet Fragments Observed in Parcel **

Note:

* The locations of visually observed skeet on the surface are denoted with red dots. These locations include the July 2017 reconnaissance, and parcel 31021080 (north of Thompson Ave and east of Rose Dr).

** All other parcels denote the observation of skeet in any DU surface or subsurface with a diamond symbol, and do not indicate the exact observed locations. Refer to the individual parcels reports for details regarding surface skeet locations

Skeet observed in TCRA parcels during RI activities will be addressed in a subsequent field event to evaluate the extent of skeet remaining on TCRA parcels.

Parcels 32404639 and 32404640 were investigated on the surface in the previous RI, the subsurface was investigated during the current RI.

E, C & W - east, central, & west
FS - feasibility study
RI - remedial investigations
TCRA - time critical removal action

Source: Esri, Maxar, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, Corp, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), Mapmylndia, © OpenStreetMap contributors, and the GIS User Community

N

150 75 0 150 300 450 Feet

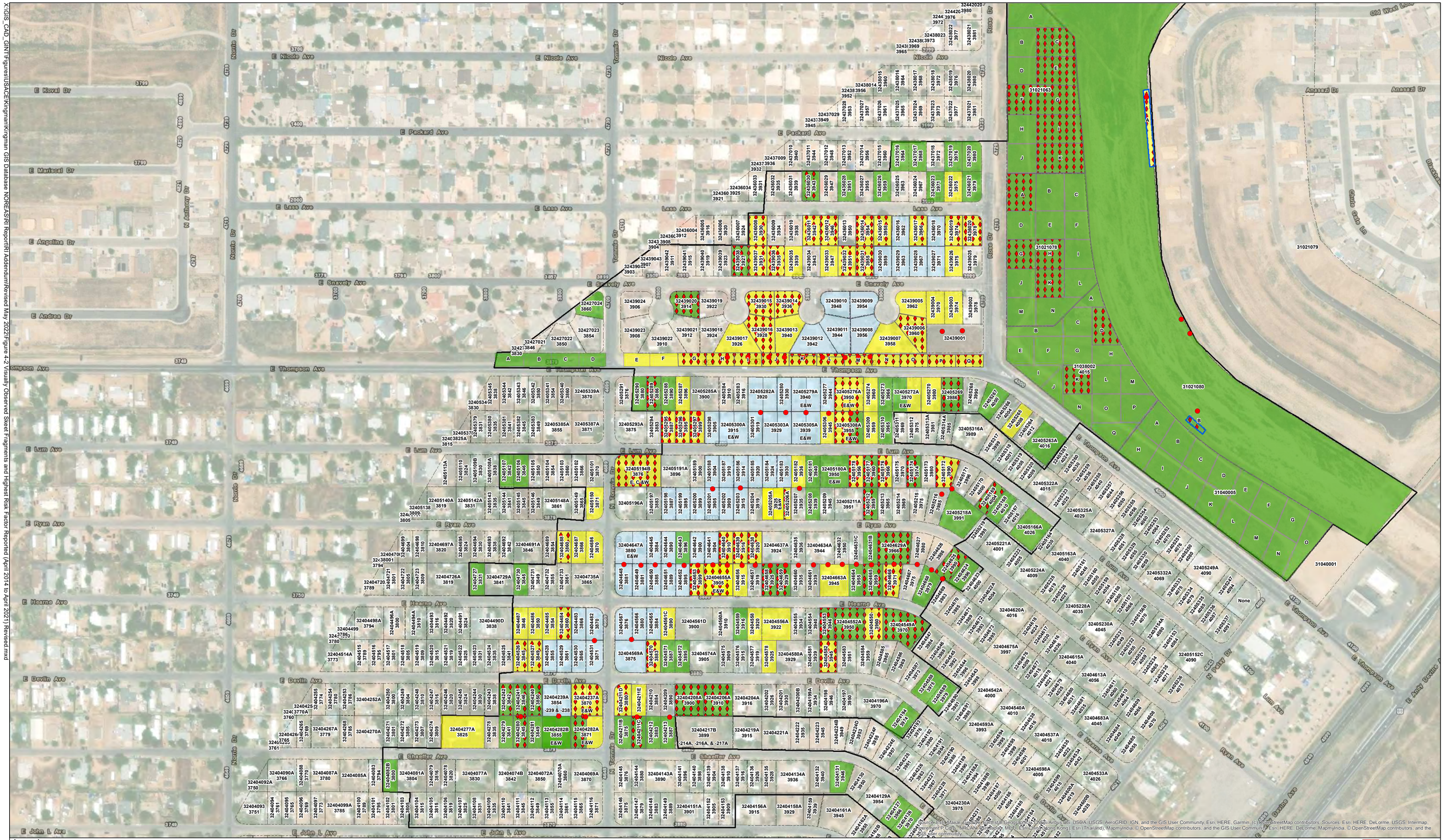
UNITED STATES ARMY CORPS OF ENGINEERS — LOS ANGELES, CALIFORNIA

RI/FS FORMER SKEET RANGE MRS01
KINGMAN, ARIZONA

FIGURE 4-1
Visually Observed Skeet Fragments
Revised, May 2022

NOREAS

X:\GIS_CAD_GIN\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\RI Addendum\Revised May 2022\Figure 4-2 Visually Observed Skeet Fragments and Highest Risk Factor Reported (April 2014 to April 2021) Revised.mxd



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Legend

- Investigated Area Boundary
- Parcel # and Address (e.g. 32405169 4004)
- TCRA 2013-2014
- Skeet Fragments Observed*
- Skeet Fragments Observed in Parcel**

RI Parcels - Incremental Lifetime Cancer Risk

- less than 10^{-6}
- more than 10^{-6}

Note:

* The locations of visually observed skeet on the surface are denoted with red dots. These locations include the July 2017 reconnaissance, and parcel 31021080 (north of Thompson Ave and east of Rose Dr).

** All other parcels denote the observation of skeet in any DU surface or subsurface with a diamond symbol, and do not indicate the exact observed locations. Refer to the individual parcels reports for details regarding surface skeet locations

Skeet observed in TCRA parcels during RI activities will be addressed in a subsequent field event to evaluate the extent of skeet remaining on TCRA parcels.

Parcels 32404639 and 32404640 were investigated on the surface in the previous RI, the subsurface was investigated during the current RI.

E, C & W - east, central, & west
FS - feasibility study
RI - remedial investigations
TCRA - time critical removal action

N

150 75 0 150 300 450 Feet

UNITED STATES ARMY CORPS OF ENGINEERS — LOS ANGELES, CALIFORNIA

RI/FS FORMER SKEET RANGE MRS01
KINGMAN, ARIZONA

FIGURE 4-2

Visually Observed Skeet Fragments and Highest Risk Factor Reported (April 2013 to April 2021) Revised, May 2022

NOREAS

APPENDIX A

HUMAN HEALTH RISK ASSESSMENT FOR RI ADDENDUM PARCELS

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APPENDIX A

Human Health Risk Estimates for RI Addendum Parcels

This Appendix to the Addendum to Remedial Investigation (RI)[1] for the Kingman Ground to Ground Gunnery Range in Mohave County includes the human health risk estimates for the parcels investigated from January 2020 to April 2021.

The methods used to estimate these potential health impacts are presented in Appendix B of the RI. In summary, the health estimating methods required the use of EPA Regional Screening Levels (RSLs)[2], the estimation of exposure point concentrations (EPCs), and risk quantification. Table 1 summarizes all carcinogenic and non-carcinogenic health risks for each parcel. Individual worksheets[3] identifying RSLs, EPCs and are provided as Exhibit A to this Appendix.

To derive the EPCs, the 95th percentile upper confidence limit (UCL), based on the Chebyshevs inequalitiy method, was calculated using the EPA ProUCL software[4]. EPCs were estimated for two intervals, 0-1, which describes potential current exposures at the parcels, and all depths, which is descriptive of potential future exposures where significant excavation and redistribution of the contaminants can occur. The ProUCL output files[5] are included as Exhibits B (0 to 1-foot interval) and Exhibit C (all depth interval).

Theoretical upper-bound incremental lifetime cancer risks (ILCRs) for carcinogenic constituents and hazard quotients (HQs) for non-carcinogenic constituents were calculated by dividing the EPCs in soil by the RSL. The ILCR are expressed in terms of probabilities. That is, a probabilistic expression is calculated to indicate the number of cancers that can be expected within a population (the lower the number the lower the probability). For example, the probability expressed as $1x10^{-5}$ can be read as a probability of cancer of one in 100,000. As a point of reference, carcinogenic risk probabilities ranging from 10^{-4} to 10^{-6} are generally considered acceptable by USEPA (National Oil and Hazardous Substances Contingency Plan; 40 Code of

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[1] NOREAS (2021). *Draft Final, Remedial Investigation Report, Former 15 Skeet Ranges, Kingman Ground-to-Ground Gunnery Range, Kingman, Mohave County, Arizona* FUDS project no. J09AZ0412. April.

[2] *USEPA, (2021). Regional Screening Levels. https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables. May. (Previous evaluations in the RI utilized the 2020 version of the RSLs. A comparison was made between 2020 and 2021 RSL values and no differences were identified for the COPCs).*

[3] Individual parcel worksheets are identified with the parcel APN, which can be cross referenced to Table 1 of this Appendix.

[4] *USEPA, (2015). Pro UCL Version 5.1.002 Users Guide. EPA/600/R-07/041. October.*

[5] Each ProUCL output file is identified with the last 5 APN numbers, and can be cross referenced to Table 1 of this Appendix.

Federal Regulations 300.430). Additional risk management criteria are to be discussed within the Feasibility Study.

For noncarcinogens, the indicator calculated is a noncarcinogenic HQ. The HQ is the ratio of the EPC divided by the COPC specific RSL, which is a level believed to be without deleterious health impacts to sensitive subpopulations. A total HQ (sum of individual HQs) less than unity, or one, is believed to be without adverse health effects to the most sensitive subpopulations.

Of the 30 parcels and easement evaluated[6], including sub-parcels and subdivisions of Thompson easement, 5 parcels and easement were found to have COPC concentrations resulting in estimated ILCR in excess of $1x10^{-6}$ (Table 1). The highest ILCR ($5x10^{-4}$) was found at the Thompson Easement L. The detected concentrations of PAHs contributed to the risks at this location under the evaluation of both depth intervals. The Thompson Easement L parcel was also found to have COPC concentrations resulting in noncarcinogenic HQ greater than one at the 0 to 1-foot interval. All other parcels had noncarcinogenic HQs of 1 or less. Lead concentrations were found to be below the USEPA residential soil screening level of 400 mg/kg at all parcels. Table 1 summarizes all carcinogenic and non-carcinogenic health risks for each parcel, and Exhibit A identifies the risks from each individual chemical at each parcel location for each depth investigated.

[6] RI addendum parcels, parcel APN 310-21-063[(A-K); 11 sub-parcels], APN 310-21-078 [(A-N); 14 sub-parcels], APN 310-38-002 [(A-Q); 17 sub-parcels], and 310-40-005 [(A-O); 15 sub-parcels)], and Thompson easement [(A-Q); 17 subdivisions] were subdivided.

Appendix A
Table 1
Summary of Potential Health Impacts
Parcels Investigated from January 2020 to April 2021

			Estimation of Potential Health Impacts					
			Surface Soil			All Depths		
Assessors Parcel Number	Street #	Street Name	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio
310-21-063 (A)	--	E Thompson Ave	4E-07	0.009	0.03	3E-07	0.009	0.03
310-21-063 (B)	--	E Thompson Ave	7E-07	0.01	0.04	6E-07	0.01	0.04
310-21-063 (C)	--	E Thompson Ave	4E-07	0.01	0.2	3E-07	0.01	0.1
310-21-063 (D)	--	E Thompson Ave	1E-06	0.01	0.04	8E-07	0.01	0.04
310-21-063 (E)	--	E Thompson Ave	6E-07	0.01	0.05	5E-07	0.01	0.04
310-21-063 (F)	--	E Thompson Ave	8E-07	0.01	0.05	6E-07	0.009	0.05
310-21-063 (G)	--	E Thompson Ave	8E-07	0.01	0.1	6E-07	0.01	0.1
310-21-063 (H)	--	E Thompson Ave	1E-06	0.01	0.2	1E-06	0.01	0.1
310-21-063 (I)	--	E Thompson Ave	1E-06	0.01	0.3	8E-07	0.01	0.2
310-21-063 (J)	--	E Thompson Ave	1E-06	0.01	0.3	9E-07	0.01	0.2
310-21-063 (K)	--	E Thompson Ave	9E-07	0.01	0.4	7E-07	0.01	0.3
310-21-078 (A)	--	E Thompson Ave.	1E-06	0.01	0.3	9E-07	0.01	0.3
310-21-078 (B)*	--	E Thompson Ave.	8E-07	0.01	0.8	6E-07	0.01	0.5
310-21-078 (C)	--	E Thompson Ave.	5E-07	0.01	0.3	4E-07	0.01	0.2
310-21-078 (D)	--	E Thompson Ave.	7E-07	0.01	0.5	6E-07	0.009	0.3
310-21-078 (E)*	--	E Thompson Ave.	6E-07	0.01	0.4	5E-07	0.01	0.3
310-21-078 (F)	--	E Thompson Ave.	4E-07	0.01	0.2	3E-07	0.009	0.2
310-21-078 (G)	--	E Thompson Ave.	7E-07	0.01	0.2	5E-07	0.009	0.2
310-21-078 (H)	--	E Thompson Ave.	8E-07	0.01	0.5	6E-07	0.01	0.4
310-21-078 (I)	--	E Thompson Ave.	3E-07	0.01	0.4	3E-07	0.01	0.3
310-21-078 (J)	--	E Thompson Ave.	7E-07	0.01	0.5	6E-07	0.01	0.4
310-21-078 (K)	--	E Thompson Ave.	6E-07	0.01	0.2	4E-07	0.01	0.1
310-21-078 (L)	--	E Thompson Ave.	1E-06	0.01	0.07	8E-07	0.009	0.06
310-21-078 (M)	--	E Thompson Ave.	1E-06	0.01	0.3	8E-07	0.01	0.3
310-21-078 (N)	--	E Thompson Ave.	3E-07	0.008	0.4	2E-07	0.009	0.3
310-38-002 (A)	--	E Thompson Ave.	9E-08	0.006	0.09	8E-08	0.006	0.07
310-38-002(B)	--	E Thompson Ave.	2E-07	0.008	0.1	1E-07	0.008	0.09
310-38-0022 (C)	--	E Thompson Ave.	9E-08	0.007	0.08	8E-08	0.006	0.06
310-38-002 (D)	--	E Thompson Ave.	6E-08	0.006	0.03	6E-08	0.006	0.03
310-38-002 (E)	--	E Thompson Ave.	7E-07	0.01	0.2	5E-07	0.01	0.2
310-38-002 (F)	--	E Thompson Ave.	7E-08	0.007	0.03	6E-08	0.007	0.03
310-38-002 (G)	--	E Thompson Ave.	5E-08	0.007	0.03	6E-08	0.007	0.03
310-38-0022 (H)	--	E Thompson Ave.	6E-08	0.006	0.03	6E-08	0.006	0.03
310-38-00202 (I)	--	E Thompson Ave.	1E-07	0.009	0.2	1E-07	0.009	0.1
310-38-002 (J)	--	E Thompson Ave.	2E-07	0.02	0.2	1E-07	0.01	0.2
310-38-002 (K)	--	E Thompson Ave.	1E-07	0.009	0.04	1E-07	0.009	0.04
310-38-002 (L)	--	E Thompson Ave.	3E-07	0.009	0.04	2E-07	0.009	0.03
310-38-002 (M)	--	E Thompson Ave.	8E-08	0.007	0.03	1E-07	0.007	0.03
310-38-002 (N)	--	E Thompson Ave.	5E-07	0.01	0.04	4E-07	0.01	0.04
310-38-002 (O)	--	E Thompson Ave.	1E-07	0.03	0.04	8E-08	0.03	0.04
310-38-002 (P)	--	E Thompson Ave.	7E-08	0.006	0.03	7E-08	0.007	0.03
310-38-002 (Q)	--	E Thompson Ave.	1E-07	0.006	0.02	8E-08	0.006	0.02
310-40-005 A	--	E Thompson Ave.	8E-08	0.006	0.09	7E-08	0.006	0.07
310-40-005 B	--	E Thompson Ave.	7E-08	0.006	0.03	7E-08	0.006	0.03
310-40-005 C	--	E Thompson Ave.	7E-08	0.008	0.03	7E-08	0.008	0.03

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Parcels Investigated from January 2020 to April 2021

			Estimation of Potential Health Impacts					
			Surface Soil			All Depths		
Assessors Parcel Number	Street #	Street Name	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio
310-40-005 D	--	E Thompson Ave.	7E-08	0.008	0.03	7E-08	0.009	0.03
310-40-005 E	--	E Thompson Ave.	1E-07	0.007	0.03	8E-08	0.007	0.03
310-40-005 F	--	E Thompson Ave.	1E-07	0.007	0.03	9E-08	0.007	0.03
310-40-005 G	--	E Thompson Ave.	1E-07	0.007	0.03	1E-07	0.007	0.03
310-40-005 H	--	E Thompson Ave.	1E-07	0.007	0.03	1E-07	0.008	0.03
310-40-005 I	--	E Thompson Ave.	1E-07	0.006	0.02	1E-07	0.006	0.02
310-40-005 J	--	E Thompson Ave.	7E-08	0.005	0.02	6E-08	0.005	0.02
310-40-005 K	--	E Thompson Ave.	6E-07	0.01	0.03	4E-07	0.01	0.03
310-40-005 L	--	E Thompson Ave.	1E-07	0.007	0.04	1E-07	0.008	0.04
310-40-005 M	--	E Thompson Ave.	2E-07	0.008	0.03	1E-07	0.007	0.03
310-40-005 N	--	E Thompson Ave.	1E-06	0.01	0.03	7E-07	0.01	0.03
310-40-005 O	--	E Thompson Ave.	5E-07	0.01	0.03	4E-07	0.01	0.03
324-04-082B	3800	E Shaeffer Ave.	7E-08	0.01	0.04	7E-08	0.01	0.04
324-04-126	3970	E Shaeffer Ave.	2E-07	0.02	0.06	2E-07	0.01	0.05
324-04-127	3966	E. Shaeffer Ave.	6E-07	0.02	0.08	5E-07	0.01	0.07
324-04-131	3946	E. Shaeffer Ave.	2E-07	0.01	0.05	1E-07	0.01	0.05
324-04-152_153	3905_09	E L John Ave.	3E-07	0.01	0.05	3E-07	0.01	0.05
324-04-194	3974	E. Devlin Ave.	1E-07	0.08	0.03	1E-07	0.06	0.03
320-45-49A	3970	E. Hearne Ave.	5E-07	0.01	0.06	4E-07	0.01	0.05
324-04-558*	3920	E. Hearne Ave.	2E-06	0.03	0.1	2E-06	0.02	0.1
324-04-588	3975	E. Devlin Ave.	7E-07	0.01	0.03	5E-07	0.01	0.03
324-04-589	3979	E. Devlin Ave.	7E-08	0.01	0.03	7E-08	0.01	0.03
324-04-663A	3945	E. Hearne Ave.	9E-06	0.05	0.3	6E-06	0.04	0.2
324-04-668*	3979	E. Hearne Ave.	2E-07	0.01	0.08	2E-07	0.01	0.07
324-05-106	3846	E. Lum Ave.	4E-07	0.008	0.03	3E-07	0.008	0.03
324-05-107	3842	E. Lum Ave.	5E-07	0.2	0.06	4E-07	0.2	0.05
324-05-166A	4026	E. Lum Ave.	2E-07	0.04	0.04	1E-07	0.03	0.04
324-05-263A*	4016	E. Thompson Ave.	6E-07	0.01	0.05	5E-07	0.01	0.05
324-05-265*	4008	E. Thompson Ave.	3E-06	0.02	0.08	2E-06	0.02	0.07
324-05-267*	4000	E. Thompson Ave.	7E-07	0.01	0.2	6E-07	0.01	0.2
324-27-024	3860	E. Snavely Ave.	9E-08	0.01	0.2	8E-08	0.009	0.1
324-36-017	3966	E. Lass Ave.	2E-04	0.8	0.1	1E-04	0.4	0.08
324-36-028	3951	E. Lass Ave.	6E-07	0.02	0.04	6E-07	0.02	0.04
324-36-030	3943	E. Lass Ave.	5E-07	0.01	0.03	4E-07	0.009	0.03
324-37-017*	3968	E. Packard Ave.	2E-07	0.009	0.03	2E-07	0.009	0.03
324-37-019	3976	E. Packard Ave.	2E-07	0.01	0.04	2E-07	0.009	0.03
324-39-020*	3914	E. Snavely Ave.	7E-07	0.01	0.05	6E-07	0.01	0.05
324-39-038	3927	E. Snavely Ave.	1E-06	0.02	0.04	1E-06	0.01	0.04
Thompson A	--	Thompson Easement	7E-07	0.01	0.1	7E-07	0.01	0.09
Thompson B	--	Thompson Easement	1E-06	0.01	0.06	1E-06	0.01	0.06
Thompson C	--	Thompson Easement	1E-06	0.01	0.05	1E-06	0.01	0.05
Thompson D	--	Thompson Easement	1E-06	0.01	0.07	1E-06	0.01	0.05
Thompson E	--	Thompson Easement	5E-06	0.03	0.05	4E-06	0.02	0.05
Thompson F	--	Thompson Easement	6E-06	0.03	0.04	5E-06	0.03	0.04
Thompson G	--	Thompson Easement	2E-05	0.07	0.1	1E-05	0.06	0.09

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			Estimation of Potential Health Impacts					
			Surface Soil			All Depths		
Assessors Parcel Number	Street #	Street Name	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio
Thompson H	--	Thompson Easement	3E-05	0.1	0.04	2E-05	0.1	0.04
Thompson I	--	Thompson Easement	7E-05	0.3	0.2	6E-05	0.3	0.1
Thompson J	--	Thompson Easement	1E-04	0.6	0.1	8E-05	0.3	0.06
Thompson K	--	Thompson Easement	2E-04	1	0.1	1E-04	0.5	0.09
Thompson L	--	Thompson Easement	5E-04	2	0.3	2E-04	1	0.2
Thompson M	--	Thompson Easement	2E-04	0.9	0.5	9E-05	0.4	0.2
Thompson N	--	Thompson Easement	7E-05	0.3	0.5	4E-05	0.2	0.2
Thompson O	--	Thompson Easement	3E-05	0.1	0.2	2E-05	0.1	0.2
Thompson P	--	Thompson Easement	2E-05	0.08	0.4	1E-05	0.06	0.4
Thompson Q	--	Thompson Easement	1E-05	0.06	0.2	9E-06	0.04	0.2

Site: Kingman APN 31021063A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.35	16.08		0.005		0.01
Zinc		23,000	51.03	52.05		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.24	2.48		0.00001		0.00001
Acenaphthene		3,600	1.05	0.90		0.0000003		0.0000003
Anthracene		18,000	3.42	3.01		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		22.45	19.05	2E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	28.37	25.29	3E-07	0.002	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		47.08	38.93	4E-08		4E-08	
Benzo(g,h,i)perylene	not available		19.82	17.47				
Benzo(k)fluoranthene	1.10E+01		17.91	14.73	2E-09		1E-09	
Chrysene	1.10E+02		49.12	37.57	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		5.04	4.42	5E-08		4E-08	
Fluoranthene		2,400	76.37	56.86		0.00003		0.00002
Fluorene		2,400	1.46	1.42		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		21.76	18.75	2E-08		2E-08	
Naphthalene	2.00E+00	130	3.91	4.28	2E-09	0.00003	2E-09	0.00003
Phenanthrene	not available		24.68	18.98				
Pyrene		1,800	65.19	49.26		0.00004		0.00003
Total Estimates					**4E-07**	**0.009**	**3E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	13.42	12.56	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.78	15.77		0.005		0.01
Zinc		23,000	58.02	56.61		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	5.05	4.24		0.00002		0.00002
Acenaphthene		3,600	2.89	2.23		0.0000008		0.0000006
Anthracene		18,000	11.18	8.60		0.0000006		0.0000005
Benz(a)anthracene	1.10E+00		37.84	32.43	3E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	47.95	41.54	4E-07	0.003	4E-07	0.002
Benzo(b)fluoranthene	1.10E+00		67.08	59.00	6E-08		5E-08	
Benzo(g,h,i)perylene	not available		55.81	47.65				
Benzo(k)fluoranthene	1.10E+01		29.39	24.94	3E-09		2E-09	
Chrysene	1.10E+02		55.38	48.59	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		17.63	14.29	2E-07		1E-07	
Fluoranthene		2,400	66.99	56.80		0.00003		0.00002
Fluorene		2,400	7.24	5.56		0.000003		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		49.33	41.89	4E-08		4E-08	
Naphthalene	2.00E+00	130	4.98	4.76	2E-09	0.00004	2E-09	0.00004
Phenanthrene	not available		38.80	31.07				
Pyrene		1,800	60.49	51.90		0.00003		0.00003
Total Estimates					**7E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	17.05	15.89	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063C

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.99	15.65		0.005		0.01
Zinc		23,000	77.85	77.30		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.14	1.10		0.000005		0.000005
Acenaphthene		3,600	0.90	0.81		0.0000002		0.0000002
Anthracene		18,000	2.51	2.36		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		18.76	16.01	2E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	26.90	23.03	2E-07	0.0015	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		35.81	30.25	3E-08		3E-08	
Benzo(g,h,i)perylene	not available		18.18	15.27				
Benzo(k)fluoranthene	1.10E+01		14.12	11.59	1E-09		1E-09	
Chrysene	1.10E+02		27.11	23.04	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		5.16	4.56	5E-08		4E-08	
Fluoranthene		2,400	31.42	26.11		0.00001		0.00001
Fluorene		2,400	1.35	1.35		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		21.91	18.48	2E-08		2E-08	
Naphthalene	2.00E+00	130	2.52	2.48	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		10.93	8.98				
Pyrene		1,800	28.19	23.63		0.00002		0.00001
Total Estimates					**4E-07**	**0.01**	**3E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	70.42	51.61	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063D

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.65	14.65		0.005		0.005
Zinc		23,000	47.99	49.16		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.38	2.57		0.00001		0.00001
Acenaphthene		3,600	6.80	5.18		0.000002		0.000001
Anthracene		18,000	8.18	6.42		0.0000005		0.0000004
Benz(a)anthracene	1.10E+00		49.36	41.38	4E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	72.26	59.83	7E-07	0.004	5E-07	0.003
Benzo(b)fluoranthene	1.10E+00		92.91	76.09	8E-08		7E-08	
Benzo(g,h,i)perylene	not available		51.19	41.75				
Benzo(k)fluoranthene	1.10E+01		34.95	28.98	3E-09		3E-09	
Chrysene	1.10E+02		63.05	52.71	6E-10		5E-10	
Dibenz(a,h)anthracene	1.10E-01		14.72	11.66	1E-07		1E-07	
Fluoranthene		2,400	84.53	71.74		0.00004		0.00003
Fluorene		2,400	4.48	3.40		0.000002		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		56.13	45.50	5E-08		4E-08	
Naphthalene	2.00E+00	130	3.58	3.15	2E-09	0.00003	2E-09	0.00002
Phenanthrene	not available		38.35	30.31				
Pyrene		1,800	84.87	71.64		0.00005		0.00004
Total Estimates					**1E-06**	**0.01**	**8E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	17.29	15.69	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063E

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.20	15.81		0.005		0.01
Zinc		23,000	60.90	56.94		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.56	1.38		0.00001		0.00001
Acenaphthene		3,600	1.39	1.11		0.0000004		0.0000003
Anthracene		18,000	2.90	2.61		0.0000002		0.0000001
Benz(a)anthracene	1.10E+00		31.70	24.65	3E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	46.42	36.69	4E-07	0.003	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		59.10	46.04	5E-08		4E-08	
Benzo(g,h,i)perylene	not available		32.27	25.13				
Benzo(k)fluoranthene	1.10E+01		23.46	18.03	2E-09		2E-09	
Chrysene	1.10E+02		45.42	35.01	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		7.26	6.04	7E-08		5E-08	
Fluoranthene		2,400	53.58	49.45		0.00002		0.00002
Fluorene		2,400	1.38	1.35		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		36.17	27.95	3E-08		3E-08	
Naphthalene	2.00E+00	130	3.47	3.19	2E-09	0.00003	2E-09	0.00002
Phenanthrene	not available		18.57	14.17				
Pyrene		1,800	55.45	42.81		0.00003		0.00002
Total Estimates					**6E-07**	**0.01**	**5E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	19.43	17.95	**0.05**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063F

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.60	13.23		0.004		0.004
Zinc		23,000	49.25	47.80		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.43	2.79		0.00001		0.00001
Acenaphthene		3,600	1.73	1.35		0.0000005		0.0000004
Anthracene		18,000	4.50	3.70		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		47.98	35.88	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	62.15	46.59	6E-07	0.003	4E-07	0.003
Benzo(b)fluoranthene	1.10E+00		82.21	61.74	7E-08		6E-08	
Benzo(g,h,i)perylene	not available		39.50	29.69				
Benzo(k)fluoranthene	1.10E+01		29.43	22.07	3E-09		2E-09	
Chrysene	1.10E+02		66.82	50.27	6E-10		5E-10	
Dibenz(a,h)anthracene	1.10E-01		10.12	7.98	9E-08		7E-08	
Fluoranthene		2,400	81.47	60.57		0.00003		0.00003
Fluorene		2,400	1.34	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		49.73	37.18	5E-08		3E-08	
Naphthalene	2.00E+00	130	6.10	5.38	3E-09	0.00005	3E-09	0.00004
Phenanthrene	not available		30.80	22.77				
Pyrene		1,800	78.51	58.36		0.00004		0.00003
Total Estimates					**8E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	20.34	18.04	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063G

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.83	14.54		0.005		0.005
Zinc		23,000	49.16	48.97		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.53	2.30		0.00001		0.00001
Acenaphthene		3,600	1.66	1.32		0.0000005		0.0000004
Anthracene		18,000	3.27	2.91		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		42.91	32.49	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	64.23	48.55	6E-07	0.004	4E-07	0.003
Benzo(b)fluoranthene	1.10E+00		81.28	61.44	7E-08		6E-08	
Benzo(g,h,i)perylene	not available		40.54	30.48				
Benzo(k)fluoranthene	1.10E+01		32.14	24.10	3E-09		2E-09	
Chrysene	1.10E+02		63.85	48.27	6E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		9.39	7.63	9E-08		7E-08	
Fluoranthene		2,400	71.83	54.62		0.00003		0.00002
Fluorene		2,400	1.35	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		47.89	36.13	4E-08		3E-08	
Naphthalene	2.00E+00	130	5.50	4.91	3E-09	0.00004	2E-09	0.00004
Phenanthrene	not available		24.22	18.40				
Pyrene		1,800	70.51	53.45		0.00004		0.00003
Total Estimates					**8E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	56.53	42.20	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063H

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.88	18.04		0.006		0.01
Zinc		23,000	59.27	56.60		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	4.06	3.47		0.00002		0.00001
Acenaphthene		3,600	2.25	1.80		0.0000006		0.0000005
Anthracene		18,000	10.18	8.63		0.0000006		0.0000005
Benz(a)anthracene	1.10E+00		76.40	60.63	7E-08		6E-08	
Benzo(a)pyrene	1.10E-01	18	96.40	76.70	9E-07	0.005	7E-07	0.004
Benzo(b)fluoranthene	1.10E+00		141.00	111.40	1E-07		1E-07	
Benzo(g,h,i)perylene	not available		80.88	63.18				
Benzo(k)fluoranthene	1.10E+01		43.99	35.19	4E-09		3E-09	
Chrysene	1.10E+02		79.69	63.97	7E-10		6E-10	
Dibenz(a,h)anthracene	1.10E-01		19.61	15.35	2E-07		1E-07	
Fluoranthene		2,400	105.20	84.16		0.00004		0.00004
Fluorene		2,400	1.33	1.31		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		93.77	73.29	9E-08		7E-08	
Naphthalene	2.00E+00	130	5.70	4.98	3E-09	0.00004	2E-09	0.00004
Phenanthrene	not available		36.14	28.73				
Pyrene		1,800	103.20	82.58		0.00006		0.00005
Total Estimates					**1E-06**	**0.01**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	70.02	52.96	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063I

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.59	14.58		0.005		0.005
Zinc		23,000	47.27	47.59		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.77	3.08		0.00001		0.00001
Acenaphthene		3,600	1.65	1.36		0.0000005		0.0000004
Anthracene		18,000	7.54	5.82		0.0000004		0.0000003
Benz(a)anthracene	1.10E+00		50.90	39.49	5E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	66.78	53.00	6E-07	0.004	5E-07	0.003
Benzo(b)fluoranthene	1.10E+00		127.50	100.90	1E-07		9E-08	
Benzo(g,h,i)perylene	not available		51.69	39.73				
Benzo(k)fluoranthene	1.10E+01		32.85	25.82	3E-09		2E-09	
Chrysene	1.10E+02		57.87	46.12	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		13.69	10.69	1E-07		1E-07	
Fluoranthene		2,400	76.13	60.09		0.00003		0.00003
Fluorene		2,400	1.49	1.45		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		62.30	47.69	6E-08		4E-08	
Naphthalene	2.00E+00	130	4.94	4.83	2E-09	0.00004	2E-09	0.00004
Phenanthrene	not available		25.51	20.19				
Pyrene		1,800	76.24	60.41		0.00004		0.00003
Total Estimates					**1E-06**	**0.01**	**8E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	103.00	77.55	**0.3**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063J

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.95	14.85		0.005		0.005
Zinc		23,000	51.55	51.41		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.31	1.17		0.00001		0.000005
Acenaphthene		3,600	1.93	1.51		0.0000005		0.0000004
Anthracene		18,000	5.48	4.47		0.0000003		0.0000002
Benz(a)anthracene	1.10E+00		62.52	49.05	6E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	91.40	71.61	8E-07	0.005	7E-07	0.004
Benzo(b)fluoranthene	1.10E+00		116.60	91.19	1E-07		8E-08	
Benzo(g,h,i)perylene	not available		60.98	47.39				
Benzo(k)fluoranthene	1.10E+01		45.99	35.73	4E-09		3E-09	
Chrysene	1.10E+02		83.56	65.65	8E-10		6E-10	
Dibenz(a,h)anthracene	1.10E-01		16.05	12.33	1E-07		1E-07	
Fluoranthene		2,400	109.30	86.16		0.00005		0.00004
Fluorene		2,400	1.30	1.32		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		69.44	53.79	6E-08		5E-08	
Naphthalene	2.00E+00	130	3.10	2.88	2E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		37.83	29.71				
Pyrene		1,800	109.70	86.23		0.00006		0.00005
Total Estimates					**1E-06**	**0.01**	**9E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	106.90	82.05	**0.3**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021063K

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.96	17.10		0.006		0.01
Zinc		23,000	60.67	57.25		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.59	1.43		0.00001		0.00001
Acenaphthene		3,600	1.34	1.09		0.0000004		0.0000003
Anthracene		18,000	3.20	2.87		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		43.09	34.31	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	63.99	50.51	6E-07	0.004	5E-07	0.003
Benzo(b)fluoranthene	1.10E+00		81.33	65.15	7E-08		6E-08	
Benzo(g,h,i)perylene	not available		42.29	33.85				
Benzo(k)fluoranthene	1.10E+01		31.49	25.46	3E-09		2E-09	
Chrysene	1.10E+02		51.46	38.66	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		12.53	10.11	1E-07		9E-08	
Fluoranthene		2,400	74.29	57.72		0.00003		0.00002
Fluorene		2,400	1.36	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		48.56	38.68	4E-08		4E-08	
Naphthalene	2.00E+00	130	3.76	3.59	2E-09	0.00003	2E-09	0.00003
Phenanthrene	not available		25.46	19.55				
Pyrene		1,800	74.75	58.08		0.00004		0.00003
Total Estimates					**9E-07**	**0.01**	**7E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	158.20	124.60	**0.4**	**0.3**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.79	15.01		0.005		0.005
Zinc		23,000	51.14	51.91		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.66	1.56		0.000007		0.000007
Acenaphthene		3,600	4.17	2.98		0.000001		0.0000008
Anthracene		18,000	11.72	8.56		0.0000007		0.0000005
Benz(a)anthracene	1.10E+00		58.13	44.18	5E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	83.11	63.91	8E-07	0.005	6E-07	0.004
Benzo(b)fluoranthene	1.10E+00		105.00	81.09	1E-07		7E-08	
Benzo(g,h,i)perylene	not available		62.61	48.24				
Benzo(k)fluoranthene	1.10E+01		42.12	31.98	4E-09		3E-09	
Chrysene	1.10E+02		73.17	56.40	7E-10		5E-10	
Dibenz(a,h)anthracene	1.10E-01		16.05	12.42	1E-07		1E-07	
Fluoranthene		2,400	112.40	84.21		0.00005		0.00004
Fluorene		2,400	2.72	2.23		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		70.42	54.13	6E-08		5E-08	
Naphthalene	2.00E+00	130	2.91	2.42	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		58.10	41.83				
Pyrene		1,800	104.60	79.17		0.00006		0.00004
Total Estimates					**1E-06**	**0.01**	**9E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	134.30	107.00	**0.3**	**0.3**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.97	15.01		0.005		0.00
Zinc		23,000	52.32	55.94		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.11	1.05		0.00000		0.00000
Acenaphthene		3,600	1.39	1.12		0.0000004		0.0000003
Anthracene		18,000	4.05	3.46		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		45.60	36.11	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	55.74	44.52	5E-07	0.003	4E-07	0.002
Benzo(b)fluoranthene	1.10E+00		80.73	63.97	7E-08		6E-08	
Benzo(g,h,i)perylene	not available		37.95	30.07				
Benzo(k)fluoranthene	1.10E+01		28.10	22.62	3E-09		2E-09	
Chrysene	1.10E+02		57.94	45.91	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		9.50	7.83	9E-08		7E-08	
Fluoranthene		2,400	82.33	64.49		0.00003		0.00003
Fluorene		2,400	1.37	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		44.78	35.69	4E-08		3E-08	
Naphthalene	2.00E+00	130	2.46	3.51	1E-09	0.00002	2E-09	0.00003
Phenanthrene	not available		32.63	25.20				
Pyrene		1,800	78.88	61.93		0.00004		0.00003
Total Estimates					**8E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	301.00	215.10	**0.8**	**0.5**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078C

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	21.14	20.05		0.007		0.01
Zinc		23,000	67.15	64.24		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.28	3.56		0.00001		0.00001
Acenaphthene		3,600	0.82	0.83		0.0000002		0.0000002
Anthracene		18,000	2.28	3.18		0.0000001		0.0000002
Benz(a)anthracene	1.10E+00		26.61	21.49	2E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	37.18	29.91	3E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		50.63	41.06	5E-08		4E-08	
Benzo(g,h,i)perylene	not available		28.75	22.75				
Benzo(k)fluoranthene	1.10E+01		22.19	17.50	2E-09		2E-09	
Chrysene	1.10E+02		37.02	30.02	3E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		11.63	9.21	1E-07		8E-08	
Fluoranthene		2,400	42.58	35.56		0.00002		0.00001
Fluorene		2,400	1.34	1.94		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		30.30	24.10	3E-08		2E-08	
Naphthalene	2.00E+00	130	3.41	2.80	2E-09	0.00003	1E-09	0.00002
Phenanthrene	not available		16.33	13.17				
Pyrene		1,800	44.21	36.53		0.00002		0.00002
Total Estimates					**5E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	107.20	81.34	**0.3**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078D

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.52	13.84		0.004		0.004
Zinc		23,000	50.65	51.47		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.70	1.41		0.00001		0.00001
Acenaphthene		3,600	1.29	1.07		0.0000004		0.0000003
Anthracene		18,000	3.20	2.88		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		41.50	31.79	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	55.43	42.48	5E-07	0.003	4E-07	0.002
Benzo(b)fluoranthene	1.10E+00		78.19	60.19	7E-08		5E-08	
Benzo(g,h,i)perylene	not available		40.74	31.38				
Benzo(k)fluoranthene	1.10E+01		27.89	21.55	3E-09		2E-09	
Chrysene	1.10E+02		55.87	42.92	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		10.13	8.36	9E-08		8E-08	
Fluoranthene		2,400	71.00	54.36		0.00003		0.00002
Fluorene		2,400	1.35	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		45.10	34.79	4E-08		3E-08	
Naphthalene	2.00E+00	130	1.89	1.67	9E-10	0.00001	8E-10	0.00001
Phenanthrene	not available		26.18	19.93				
Pyrene		1,800	75.12	57.32		0.00004		0.00003
Total Estimates					**7E-07**	**0.01**	**6E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	185.60	137.70	**0.5**	**0.3**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078E

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	18.60	18.24		0.006		0.01
Zinc		23,000	63.28	63.99		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.22	1.15		0.00001		0.000005
Acenaphthene		3,600	1.04	0.89		0.0000003		0.0000002
Anthracene		18,000	2.91	2.64		0.0000002		0.0000001
Benz(a)anthracene	1.10E+00		37.31	28.11	3E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	48.17	36.41	4E-07	0.003	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		69.68	52.48	6E-08		5E-08	
Benzo(g,h,i)perylene	not available		32.56	24.48				
Benzo(k)fluoranthene	1.10E+01		25.38	19.11	2E-09		2E-09	
Chrysene	1.10E+02		51.19	38.55	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		7.37	6.16	7E-08		6E-08	
Fluoranthene		2,400	67.39	50.91		0.00003		0.00002
Fluorene		2,400	1.35	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		36.65	28.03	3E-08		3E-08	
Naphthalene	2.00E+00	130	3.31	2.64	2E-09	0.00003	1E-09	0.00002
Phenanthrene	not available		27.83	20.82				
Pyrene		1,800	65.59	49.36		0.00004		0.00003
Total Estimates					**6E-07**	**0.01**	**5E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	146.10	109.10	**0.4**	**0.3**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078F

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.33	16.89		0.006		0.01
Zinc		23,000	58.63	56.13		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	0.91	1.01		0.000004		0.000004
Acenaphthene		3,600	0.65	0.61		0.0000002		0.0000002
Anthracene		18,000	2.39	2.33		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		19.80	16.26	2E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	27.70	23.12	3E-07	0.002	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		41.09	34.31	4E-08		3E-08	
Benzo(g,h,i)perylene	not available		22.95	19.31				
Benzo(k)fluoranthene	1.10E+01		15.36	12.44	1E-09		1E-09	
Chrysene	1.10E+02		29.15	24.14	3E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		5.13	4.57	5E-08		4E-08	
Fluoranthene		2,400	35.06	29.08		0.00001		0.00001
Fluorene		2,400	1.35	1.34		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		23.91	20.22	2E-08		2E-08	
Naphthalene	2.00E+00	130	1.91	1.75	1E-09	0.00001	9E-10	0.00001
Phenanthrene	not available		12.63	10.35				
Pyrene		1,800	36.77	30.40		0.00002		0.00002
Total Estimates					**4E-07**	**0.01**	**3E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	86.47	64.54	**0.2**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078G

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.10	14.25		0.004		0.005
Zinc		23,000	60.63	56.92		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.14	1.74		0.00001		0.00001
Acenaphthene		3,600	1.42	1.14		0.0000004		0.0000003
Anthracene		18,000	4.02	3.42		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		42.04	31.60	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	46.88	35.64	4E-07	0.003	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		76.27	57.96	7E-08		5E-08	
Benzo(g,h,i)perylene	not available		41.69	31.57				
Benzo(k)fluoranthene	1.10E+01		29.46	22.13	3E-09		2E-09	
Chrysene	1.10E+02		53.06	40.31	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		12.58	9.82	1E-07		9E-08	
Fluoranthene		2,400	81.09	61.65		0.00003		0.00003
Fluorene		2,400	1.34	1.34		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		45.92	34.75	4E-08		3E-08	
Naphthalene	2.00E+00	130	1.34	1.22	7E-10	0.00001	6E-10	0.00001
Phenanthrene	not available		28.75	21.67				
Pyrene		1,800	78.74	59.66		0.00004		0.00003
Total Estimates					**7E-07**	**0.01**	**5E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	95.53	72.43	**0.2**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078H

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.69	17.35		0.006		0.01
Zinc		23,000	52.55	53.75		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.00	0.99		0.000004		0.000004
Acenaphthene		3,600	0.53	0.53		0.0000001		0.0000001
Anthracene		18,000	3.58	3.19		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		41.50	31.55	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	60.40	46.25	5E-07	0.003	4E-07	0.003
Benzo(b)fluoranthene	1.10E+00		84.26	64.44	8E-08		6E-08	
Benzo(g,h,i)perylene	not available		37.38	28.39				
Benzo(k)fluoranthene	1.10E+01		32.07	24.40	3E-09		2E-09	
Chrysene	1.10E+02		53.49	40.75	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		8.86	7.27	8E-08		7E-08	
Fluoranthene		2,400	79.74	60.62		0.00003		0.00003
Fluorene		2,400	1.33	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		45.43	34.62	4E-08		3E-08	
Naphthalene	2.00E+00	130	1.00	0.99	5E-10	0.00001	5E-10	0.00001
Phenanthrene	not available		25.94	19.55				
Pyrene		1,800	79.94	60.79		0.00004		0.00003
Total Estimates					**8E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	209.90	165.00	**0.5**	**0.4**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078I

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.85	17.50		0.006		0.01
Zinc		23,000	66.48	62.74		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.04	1.06		0.000004		0.000004
Acenaphthene		3,600	0.65	0.61		0.0000002		0.0000002
Anthracene		18,000	2.38	2.33		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		16.30	13.64	1E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	25.81	21.19	2E-07	0.001	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		31.97	26.68	3E-08		2E-08	
Benzo(g,h,i)perylene	not available		16.40	13.54				
Benzo(k)fluoranthene	1.10E+01		13.52	11.34	1E-09		1E-09	
Chrysene	1.10E+02		24.88	20.64	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		5.62	5.01	5E-08		5E-08	
Fluoranthene		2,400	36.28	29.13		0.00002		0.00001
Fluorene		2,400	1.32	1.32		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		18.79	16.06	2E-08		1E-08	
Naphthalene	2.00E+00	130	1.92	1.59	1E-09	0.00001	8E-10	0.00001
Phenanthrene	not available		13.56	10.72				
Pyrene		1,800	35.86	28.58		0.00002		0.00002
Total Estimates					**3E-07**	**0.01**	**3E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	158.30	119.90	**0.4**	**0.3**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078J

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.73	16.93		0.006		0.01
Zinc		23,000	58.90	57.30		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	31.97	21.61		0.00013		0.00009
Acenaphthene		3,600	37.23	25.03		0.00001		0.000007
Anthracene		18,000	38.92	26.67		0.0000022		0.000001
Benz(a)anthracene	1.10E+00		51.89	39.23	5E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	54.75	43.35	5E-07	0.003	4E-07	0.002
Benzo(b)fluoranthene	1.10E+00		56.04	43.49	5E-08		4E-08	
Benzo(g,h,i)perylene	not available		29.90	23.05				
Benzo(k)fluoranthene	1.10E+01		24.20	18.76	2E-09		2E-09	
Chrysene	1.10E+02		59.45	46.43	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		7.56	6.28	7E-08		6E-08	
Fluoranthene		2,400	67.65	55.22		0.00003		0.00002
Fluorene		2,400	1.31	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		36.17	28.03	3E-08		3E-08	
Naphthalene	2.00E+00	130	35.33	23.93	2E-08	0.0003	1E-08	0.0002
Phenanthrene	not available		46.06	34.41				
Pyrene		1,800	67.06	54.14		0.00004		0.00003
Total Estimates					**7E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	205.50	159.40	**0.5**	**0.4**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078K

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	18.34	18.00		0.006		0.01
Zinc		23,000	54.21	59.06		0.002		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.00	0.99		0.000004		0.000004
Acenaphthene		3,600	1.02	0.87		0.0000003		0.0000002
Anthracene		18,000	2.54	2.39		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		31.88	23.87	3E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	46.80	34.62	4E-07	0.003	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		55.78	42.13	5E-08		4E-08	
Benzo(g,h,i)perylene	not available		29.58	22.15				
Benzo(k)fluoranthene	1.10E+01		25.84	19.47	2E-09		2E-09	
Chrysene	1.10E+02		44.44	33.15	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		4.42	4.02	4E-08		4E-08	
Fluoranthene		2,400	60.64	45.70		0.00003		0.00002
Fluorene		2,400	1.34	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		33.66	25.27	3E-08		2E-08	
Naphthalene	2.00E+00	130	2.35	1.96	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		23.41	17.83				
Pyrene		1,800	60.00	45.21		0.00003		0.00003
Total Estimates					**6E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	67.77	56.38	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078L

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.31	13.11		0.004		0.004
Zinc		23,000	44.15	45.97		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.13	1.08		0.000005		0.000005
Acenaphthene		3,600	0.63	0.59		0.0000002		0.0000002
Anthracene		18,000	2.22	2.18		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		68.59	47.77	6E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	64.57	45.47	6E-07	0.004	4E-07	0.003
Benzo(b)fluoranthene	1.10E+00		79.27	56.53	7E-08		5E-08	
Benzo(g,h,i)perylene	not available		13.49	10.75				
Benzo(k)fluoranthene	1.10E+01		10.98	8.84	1E-09		8E-10	
Chrysene	1.10E+02		69.70	49.43	6E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		50.89	34.98	5E-07		3E-07	
Fluoranthene		2,400	85.53	60.90		0.00004		0.00003
Fluorene		2,400	42.74	28.92		0.00002		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		15.50	12.36	1E-08		1E-08	
Naphthalene	2.00E+00	130	2.02	1.76	1E-09	0.00002	9E-10	0.00001
Phenanthrene	not available		64.96	45.11				
Pyrene		1,800	27.50	22.52		0.00002		0.00001
Total Estimates					**1E-06**	**0.01**	**8E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	26.32	25.43	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078M

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	21.18	19.91		0.007		0.01
Zinc		23,000	70.26	68.00		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.62	1.39		0.00001		0.00001
Acenaphthene		3,600	50.73	34.19		0.00001		0.000009
Anthracene		18,000	14.07	10.07		0.0000008		0.0000006
Benz(a)anthracene	1.10E+00		116.00	81.10	1E-07		7E-08	
Benzo(a)pyrene	1.10E-01	18	49.66	36.21	5E-07	0.003	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		68.74	49.78	6E-08		5E-08	
Benzo(g,h,i)perylene	not available		34.43	25.14				
Benzo(k)fluoranthene	1.10E+01		84.66	58.65	8E-09		5E-09	
Chrysene	1.10E+02		51.53	37.65	5E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		53.00	36.45	5E-07		3E-07	
Fluoranthene		2,400	134.10	96.81		0.00006		0.00004
Fluorene		2,400	51.42	34.81		0.00002		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		39.37	28.57	4E-08		3E-08	
Naphthalene	2.00E+00	130	47.10	32.15	2E-08	0.0004	2E-08	0.0002
Phenanthrene	not available		101.50	72.10				
Pyrene		1,800	81.47	58.87		0.00005		0.00003
Total Estimates					**1E-06**	**0.01**	**8E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	112.70	107.30	**0.3**	**0.3**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078N

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.92	17.14		0.005		0.01
Zinc		23,000	48.55	58.78		0.002		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.22	1.10		0.00001		0.000005
Acenaphthene		3,600	0.67	0.62		0.0000002		0.0000002
Anthracene		18,000	2.17	2.16		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		17.19	13.10	2E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	20.07	15.37	2E-07	0.001	1E-07	0.001
Benzo(b)fluoranthene	1.10E+00		27.80	21.25	3E-08		2E-08	
Benzo(g,h,i)perylene	not available		13.29	10.33				
Benzo(k)fluoranthene	1.10E+01		12.26	9.41	1E-09		9E-10	
Chrysene	1.10E+02		22.43	17.10	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		3.47	3.41	3E-08		3E-08	
Fluoranthene		2,400	32.63	24.70		0.00001		0.00001
Fluorene		2,400	1.33	1.32		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		14.96	11.61	1E-08		1E-08	
Naphthalene	2.00E+00	130	2.70	2.41	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		16.86	12.56				
Pyrene		1,800	30.49	23.12		0.00002		0.00001
Total Estimates					**3E-07**	**0.008**	**2E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	172.30	124.50	**0.4**	**0.3**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	11.55	10.77		0.004		0.003
Zinc		23,000	44.82	41.95		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.06	1.04		0.000004		0.000004
Acenaphthene		3,600	0.54	0.53		0.0000001		0.0000001
Anthracene		18,000	2.18	2.17		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.64	2.47	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	4.65	3.93	4E-08	0.0003	4E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		6.48	5.54	6E-09		5E-09	
Benzo(g,h,i)perylene	not available		3.58	3.52				
Benzo(k)fluoranthene	1.10E+01		2.30	2.24	2E-10		2E-10	
Chrysene	1.10E+02		4.82	4.04	4E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.36	3.34	3E-08		3E-08	
Fluoranthene		2,400	5.83	4.77		0.000002		0.000002
Fluorene		2,400	1.34	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.86	3.65	4E-09		3E-09	
Naphthalene	2.00E+00	130	2.84	2.37	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		3.80	3.65				
Pyrene		1,800	5.03	4.51		0.000003		0.000003
Total Estimates					**9E-08**	**0.006**	**8E-08**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	35.60	27.05	**0.09**	**0.07**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.37	16.04		0.005		0.005
Zinc		23,000	55.70	55.18		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.65	1.47		0.000007		0.000006
Acenaphthene		3,600	1.03	0.88		0.0000003		0.0000002
Anthracene		18,000	3.02	2.71		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		12.10	9.29	1E-08		8E-09	
Benzo(a)pyrene	1.10E-01	18	9.15	6.85	8E-08	0.001	6E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		18.25	14.07	2E-08		1E-08	
Benzo(g,h,i)perylene	not available		8.72	7.08				
Benzo(k)fluoranthene	1.10E+01		6.93	5.56	6E-10		5E-10	
Chrysene	1.10E+02		21.05	15.71	2E-10		1E-10	
Dibenz(a,h)anthracene	1.10E-01		3.33	3.33	3E-08		3E-08	
Fluoranthene		2,400	21.61	18.89		0.000009		0.000008
Fluorene		2,400	1.43	1.41		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		8.98	7.27	8E-09		7E-09	
Naphthalene	2.00E+00	130	3.13	2.54	2E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		13.94	13.02				
Pyrene		1,800	19.41	15.83		0.000011		0.000009
Total Estimates					**2E-07**	**0.01**	**1E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	50.11	37.93	**0.1**	**0.09**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002C

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.83	12.90		0.004		0.00
Zinc		23,000	50.01	47.12		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	4.40	3.25		0.00002		0.00001
Acenaphthene		3,600	0.55	0.54		0.0000002		0.0000001
Anthracene		18,000	2.24	2.18		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		3.10	2.77	3E-09		3E-09	
Benzo(a)pyrene	1.10E-01	18	4.11	3.46	4E-08	0.0002	3E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		5.99	5.15	5E-09		5E-09	
Benzo(g,h,i)perylene	not available		3.57	3.44				
Benzo(k)fluoranthene	1.10E+01		2.24	2.18	2E-10		2E-10	
Chrysene	1.10E+02		4.82	4.01	4E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.45	3.36	3E-08		3E-08	
Fluoranthene		2,400	6.25	5.06		0.000003		0.000002
Fluorene		2,400	1.38	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.46	3.36	3E-09		3E-09	
Naphthalene	2.00E+00	130	10.69	8.50	5E-09	0.00008	4E-09	0.00007
Phenanthrene	not available		3.45	3.36				
Pyrene		1,800	6.24	5.26		0.000003		0.000003
Total Estimates					**9E-08**	**0.007**	**8E-08**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	30.56	23.82	**0.08**	**0.06**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002D

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.20	11.78		0.004		0.004
Zinc		23,000	44.02	43.07		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.23	1.13		0.000005		0.000005
Acenaphthene		3,600	0.54	0.54		0.0000002		0.0000001
Anthracene		18,000	2.21	2.19		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.35	2.25	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	2.35	2.28	2E-08	0.0001	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		3.77	3.57	3E-09		3E-09	
Benzo(g,h,i)perylene	not available		3.39	3.37				
Benzo(k)fluoranthene	1.10E+01		2.21	2.19	2E-10		2E-10	
Chrysene	1.10E+02		3.29	2.97	3E-11		3E-11	
Dibenz(a,h)anthracene	1.10E-01		2.39	3.37	2E-08		3E-08	
Fluoranthene		2,400	3.57	3.16		0.000001		0.000001
Fluorene		2,400	1.36	1.35		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.39	3.37	3E-09		3E-09	
Naphthalene	2.00E+00	130	6.01	4.62	3E-09	0.00005	2E-09	0.00004
Phenanthrene	not available		3.39	3.37				
Pyrene		1,800	3.66	3.51		0.000002		0.000002
Total Estimates					**6E-08**	**0.006**	**6E-08**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.30	11.01	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002E

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	19.77	18.52		0.006		0.006
Zinc		23,000	64.44	62.60		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.24	1.83		0.000009		0.000008
Acenaphthene		3,600	13.03	9.04		0.0000036		0.0000025
Anthracene		18,000	25.20	17.70		0.000001		0.000001
Benz(a)anthracene	1.10E+00		52.99	37.59	5E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	50.62	36.23	5E-07	0.003	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		66.59	48.03	6E-08		4E-08	
Benzo(g,h,i)perylene	not available		27.43	20.04				
Benzo(k)fluoranthene	1.10E+01		28.95	20.89	3E-09		2E-09	
Chrysene	1.10E+02		48.81	35.09	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		7.69	6.21	7E-08		6E-08	
Fluoranthene		2,400	121.70	86.32		0.00005		0.00004
Fluorene		2,400	8.84	6.31		0.000004		0.000003
Indeno(1,2,3-c,d)pyrene	1.10E+00		36.06	26.13	3E-08		2E-08	
Naphthalene	2.00E+00	130	3.76	3.01	2E-09	0.00003	2E-09	0.00002
Phenanthrene	not available		109.40	76.54				
Pyrene		1,800	100.20	71.13		0.00006		0.00004
Total Estimates					**7E-07**	**0.01**	**5E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	84.37	63.39	**0.2**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002F

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.90	14.49		0.004		0.005
Zinc		23,000	51.55	53.03		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.57	2.15		0.00001		0.000009
Acenaphthene		3,600	0.56	0.55		0.0000002		0.0000002
Anthracene		18,000	2.18	2.15		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		4.01	3.39	4E-09		3E-09	
Benzo(a)pyrene	1.10E-01	18	2.18	2.15	2E-08	0.0001	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		6.23	5.34	6E-09		5E-09	
Benzo(g,h,i)perylene	not available		3.91	3.65				
Benzo(k)fluoranthene	1.10E+01		3.79	3.23	3E-10		3E-10	
Chrysene	1.10E+02		5.06	4.17	5E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.41	3.33	3E-08		3E-08	
Fluoranthene		2,400	6.92	5.47		0.000003		0.000002
Fluorene		2,400	1.34	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.44	4.03	4E-09		4E-09	
Naphthalene	2.00E+00	130	4.68	3.92	2E-09	0.00004	2E-09	0.00003
Phenanthrene	not available		3.73	3.57				
Pyrene		1,800	5.84	4.99		0.000003		0.000003
Total Estimates					**7E-08**	**0.007**	**6E-08**	**0.007**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	13.53	13.09	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002G

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.18	14.38		0.005		0.005
Zinc		23,000	54.85	53.99		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.44	2.00		0.00001		0.000008
Acenaphthene		3,600	0.55	0.54		0.0000002		0.0000001
Anthracene		18,000	2.25	2.19		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.25	2.19	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	2.25	2.19	2E-08	0.0001	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		3.70	3.53	3E-09		3E-09	
Benzo(g,h,i)perylene	not available		3.46	3.37				
Benzo(k)fluoranthene	1.10E+01		2.25	2.19	2E-10		2E-10	
Chrysene	1.10E+02		2.18	2.16	2E-11		2E-11	
Dibenz(a,h)anthracene	1.10E-01		2.46	3.37	2E-08		3E-08	
Fluoranthene		2,400	3.89	3.37		0.000002		0.000001
Fluorene		2,400	1.38	1.35		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.46	3.37	3E-09		3E-09	
Naphthalene	2.00E+00	130	3.52	2.84	2E-09	0.00003	1E-09	0.00002
Phenanthrene	not available		3.52	3.41				
Pyrene		1,800	3.73	3.55		0.000002		0.000002
Total Estimates					**5E-08**	**0.007**	**6E-08**	**0.007**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	13.58	13.03	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002H

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.61	12.59		0.004		0.004
Zinc		23,000	49.82	49.02		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	0.98	1.00		0.000004		0.000004
Acenaphthene		3,600	0.54	0.53		0.0000002		0.0000001
Anthracene		18,000	2.20	2.16		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.61	2.42	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	2.20	2.16	2E-08	0.0001	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		4.57	4.07	4E-09		4E-09	
Benzo(g,h,i)perylene	not available		3.32	3.31				
Benzo(k)fluoranthene	1.10E+01		2.74	2.51	2E-10		2E-10	
Chrysene	1.10E+02		3.69	3.14	3E-11		3E-11	
Dibenz(a,h)anthracene	1.10E-01		3.38	3.33	3E-08		3E-08	
Fluoranthene		2,400	4.32	3.60		0.000002		0.000002
Fluorene		2,400	1.36	1.33		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.33	3.30	3E-09		3E-09	
Naphthalene	2.00E+00	130	2.87	2.30	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		3.54	3.45				
Pyrene		1,800	3.86	3.64		0.000002		0.000002
Total Estimates					**6E-08**	**0.006**	**6E-08**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	13.64	12.90	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002I

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	19.21	18.96		0.006		0.006
Zinc		23,000	61.93	63.43		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.67	1.49		0.000007		0.000006
Acenaphthene		3,600	0.70	0.63		0.0000002		0.0000002
Anthracene		18,000	2.16	2.13		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		5.87	4.94	5E-09		4E-09	
Benzo(a)pyrene	1.10E-01	18	9.23	7.42	8E-08	0.0005	7E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		11.86	9.59	1E-08		9E-09	
Benzo(g,h,i)perylene	not available		6.14	5.19				
Benzo(k)fluoranthene	1.10E+01		4.35	3.68	4E-10		3E-10	
Chrysene	1.10E+02		9.50	7.61	9E-11		7E-11	
Dibenz(a,h)anthracene	1.10E-01		3.33	3.28	3E-08		3E-08	
Fluoranthene		2,400	13.78	11.39		0.000006		0.000005
Fluorene		2,400	1.33	1.31		0.0000006		0.0000005
Indeno(1,2,3-c,d)pyrene	1.10E+00		5.84	5.03	5E-09		5E-09	
Naphthalene	2.00E+00	130	3.44	2.97	2E-09	0.00003	1E-09	0.00002
Phenanthrene	not available		6.40	5.67				
Pyrene		1,800	12.07	9.94		0.000007		0.000006
Total Estimates					**1E-07**	**0.009**	**1E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	70.51	53.20	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002J

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	44.06	35.22		0.01		0.01
Zinc		23,000	68.67	68.31		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.12	2.42		0.00001		0.00001
Acenaphthene		3,600	0.59	0.56		0.0000002		0.0000002
Anthracene		18,000	2.15	2.15		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		7.18	5.81	7E-09		5E-09	
Benzo(a)pyrene	1.10E-01	18	10.16	7.79	9E-08	0.0006	7E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		12.72	10.28	1E-08		9E-09	
Benzo(g,h,i)perylene	not available		7.25	6.03				
Benzo(k)fluoranthene	1.10E+01		7.61	6.04	7E-10		5E-10	
Chrysene	1.10E+02		10.04	8.04	9E-11		7E-11	
Dibenz(a,h)anthracene	1.10E-01		5.19	4.51	5E-08		4E-08	
Fluoranthene		2,400	11.07	9.36		0.000005		0.000004
Fluorene		2,400	1.33	1.33		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		8.51	6.93	8E-09		6E-09	
Naphthalene	2.00E+00	130	3.39	2.90	2E-09	0.00003	1E-09	0.00002
Phenanthrene	not available		4.23	3.94				
Pyrene		1,800	9.96	8.28		0.000006		0.000005
Total Estimates					**2E-07**	**0.02**	**1E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	86.78	63.41	**0.2**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002K

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.85	17.86		0.006		0.006
Zinc		23,000	57.44	58.57		0.002		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.01	1.00		0.000004		0.000004
Acenaphthene		3,600	0.54	0.53		0.0000001		0.0000001
Anthracene		18,000	2.18	2.16		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		6.34	5.10	6E-09		5E-09	
Benzo(a)pyrene	1.10E-01	18	9.16	6.97	8E-08	0.0005	6E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		11.51	9.11	1E-08		8E-09	
Benzo(g,h,i)perylene	not available		5.40	4.72				
Benzo(k)fluoranthene	1.10E+01		4.73	3.93	4E-10		4E-10	
Chrysene	1.10E+02		8.20	6.45	7E-11		6E-11	
Dibenz(a,h)anthracene	1.10E-01		3.35	3.33	3E-08		3E-08	
Fluoranthene		2,400	12.57	9.60		0.000005		0.000004
Fluorene		2,400	1.34	1.33		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		6.54	5.54	6E-09		5E-09	
Naphthalene	2.00E+00	130	2.98	2.42	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		4.92	4.41				
Pyrene		1,800	11.13	8.89		0.000006		0.000005
Total Estimates					**1E-07**	**0.009**	**1E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	14.87	14.19	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002L

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.30	16.68		0.005		0.005
Zinc		23,000	54.96	56.35		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.86	1.57		0.000008		0.000007
Acenaphthene		3,600	1.76	1.35		0.0000005		0.0000004
Anthracene		18,000	2.69	2.50		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		19.98	14.03	2E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	24.72	17.22	2E-07	0.001	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		29.63	20.92	3E-08		2E-08	
Benzo(g,h,i)perylene	not available		15.35	11.29				
Benzo(k)fluoranthene	1.10E+01		12.55	9.07	1E-09		8E-10	
Chrysene	1.10E+02		27.92	19.42	3E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		4.14	3.85	4E-08		3E-08	
Fluoranthene		2,400	33.52	23.27		0.00001		0.00001
Fluorene		2,400	1.35	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		17.40	12.66	2E-08		1E-08	
Naphthalene	2.00E+00	130	7.44	5.35	4E-09	0.00006	3E-09	0.00004
Phenanthrene	not available		16.86	12.28				
Pyrene		1,800	37.67	26.29		0.00002		0.00001
Total Estimates					**3E-07**	**0.009**	**2E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	14.12	13.56	**0.04**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002M

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.48	12.31		0.004		0.004
Zinc		23,000	52.14	58.67		0.002		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.06	1.09		0.000004		0.000005
Acenaphthene		3,600	0.53	0.56		0.0000001		0.0000002
Anthracene		18,000	2.15	2.14		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.14	7.14	2E-09		6E-09	
Benzo(a)pyrene	1.10E-01	18	3.95	5.99	4E-08	0.0002	5E-08	0.0003
Benzo(b)fluoranthene	1.10E+00		4.03	14.39	4E-09		1E-08	
Benzo(g,h,i)perylene	not available		3.32	4.54				
Benzo(k)fluoranthene	1.10E+01		2.15	5.59	2E-10		5E-10	
Chrysene	1.10E+02		3.07	13.80	3E-11		1E-10	
Dibenz(a,h)anthracene	1.10E-01		3.32	3.30	3E-08		3E-08	
Fluoranthene		2,400	4.92	7.86		0.000002		0.000003
Fluorene		2,400	1.33	1.32		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.70	6.16	3E-09		6E-09	
Naphthalene	2.00E+00	130	1.99	1.73	1E-09	0.00002	9E-10	0.00001
Phenanthrene	not available		3.70	3.55				
Pyrene		1,800	4.42	7.49		0.000002		0.000004
Total Estimates					**8E-08**	**0.007**	**1E-07**	**0.007**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.78	11.31	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002N

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.69	17.98		0.005		0.006
Zinc		23,000	55.30	61.95		0.002		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.56	1.37		0.000007		0.000006
Acenaphthene		3,600	10.06	6.89		0.000003		0.000002
Anthracene		18,000	19.60	13.77		0.000001		0.0000008
Benz(a)anthracene	1.10E+00		41.40	28.47	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	39.96	27.49	4E-07	0.002	2E-07	0.002
Benzo(b)fluoranthene	1.10E+00		50.17	34.92	5E-08		3E-08	
Benzo(g,h,i)perylene	not available		20.61	14.89				
Benzo(k)fluoranthene	1.10E+01		22.47	15.82	2E-09		1E-09	
Chrysene	1.10E+02		38.28	26.51	3E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		6.39	5.34	6E-08		5E-08	
Fluoranthene		2,400	93.74	63.83		0.00004		0.00003
Fluorene		2,400	9.43	6.71		0.000004		0.000003
Indeno(1,2,3-c,d)pyrene	1.10E+00		26.87	19.13	2E-08		2E-08	
Naphthalene	2.00E+00	130	3.47	2.76	2E-09	0.00003	1E-09	0.00002
Phenanthrene	not available		89.56	60.99				
Pyrene		1,800	78.42	53.70		0.00004		0.00003
Total Estimates					**5E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	15.82	14.72	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002O

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	94.69	68.61		0.03		0.02
Zinc		23,000	60.78	60.84		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.12	1.07		0.000005		0.000004
Acenaphthene		3,600	0.54	0.54		0.0000002		0.0000001
Anthracene		18,000	2.19	2.17		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		4.73	3.99	4E-09		4E-09	
Benzo(a)pyrene	1.10E-01	18	5.18	4.31	5E-08	0.0003	4E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		8.70	7.19	8E-09		7E-09	
Benzo(g,h,i)perylene	not available		3.46	3.38				
Benzo(k)fluoranthene	1.10E+01		2.87	2.63	3E-10		2E-10	
Chrysene	1.10E+02		6.84	5.56	6E-11		5E-11	
Dibenz(a,h)anthracene	1.10E-01		3.37	3.33	3E-08		3E-08	
Fluoranthene		2,400	11.09	8.74		0.000005		0.000004
Fluorene		2,400	1.35	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.14	3.85	4E-09		3E-09	
Naphthalene	2.00E+00	130	3.78	2.93	2E-09	0.00003	1E-09	0.00002
Phenanthrene	not available		5.44	4.68				
Pyrene		1,800	9.13	7.51		0.000005		0.000004
Total Estimates					**1E-07**	**0.03**	**8E-08**	**0.03**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	17.63	16.01	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002P

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.85	14.39		0.004		0.005
Zinc		23,000	46.34	50.57		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.08	1.05		0.000005		0.000004
Acenaphthene		3,600	0.53	0.53		0.0000001		0.0000001
Anthracene		18,000	2.17	2.16		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.47	2.35	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	3.29	2.87	3E-08	0.0002	3E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		4.82	4.28	4E-09		4E-09	
Benzo(g,h,i)perylene	not available		3.88	3.65				
Benzo(k)fluoranthene	1.10E+01		2.17	2.16	2E-10		2E-10	
Chrysene	1.10E+02		3.91	3.38	4E-11		3E-11	
Dibenz(a,h)anthracene	1.10E-01		3.33	3.32	3E-08		3E-08	
Fluoranthene		2,400	6.79	5.46		0.000003		0.000002
Fluorene		2,400	1.33	1.33		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.80	3.62	3E-09		3E-09	
Naphthalene	2.00E+00	130	2.05	1.96	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		4.03	3.75				
Pyrene		1,800	5.95	5.03		0.000003		0.000003
Total Estimates					**7E-08**	**0.006**	**7E-08**	**0.007**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.98	12.17	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002Q

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	11.71	12.88		0.004		0.004
Zinc		23,000	40.88	43.90		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.25	1.16		0.000005		0.000005
Acenaphthene		3,600	0.54	0.54		0.0000002		0.0000001
Anthracene		18,000	2.20	2.17		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		4.65	3.86	4E-09		4E-09	
Benzo(a)pyrene	1.10E-01	18	5.22	4.28	5E-08	0.0003	4E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		9.21	7.44	8E-09		7E-09	
Benzo(g,h,i)perylene	not available		5.51	4.83				
Benzo(k)fluoranthene	1.10E+01		2.97	2.69	3E-10		2E-10	
Chrysene	1.10E+02		7.43	5.89	7E-11		5E-11	
Dibenz(a,h)anthracene	1.10E-01		3.38	3.34	3E-08		3E-08	
Fluoranthene		2,400	8.08	6.20		0.000003		0.000003
Fluorene		2,400	1.35	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.34	3.97	4E-09		4E-09	
Naphthalene	2.00E+00	130	3.41	2.67	2E-09	0.00003	1E-09	0.00002
Phenanthrene	not available		4.64	4.22				
Pyrene		1,800	9.18	7.41		0.000005		0.000004
Total Estimates					**1E-07**	**0.006**	**8E-08**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	9.07	9.36	**0.02**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	11.75	11.62		0.004		0.004
Zinc		23,000	45.34	43.87		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.16	2.19		0.000009		0.000009
Acenaphthene		3,600	0.54	0.53		0.0000002		0.0000001
Anthracene		18,000	2.20	2.14		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.85	2.60	3E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	3.51	3.08	3E-08	0.0002	3E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		6.54	5.58	6E-09		5E-09	
Benzo(g,h,i)perylene	not available		3.45	3.34				
Benzo(k)fluoranthene	1.10E+01		2.21	2.15	2E-10		2E-10	
Chrysene	1.10E+02		5.29	4.38	5E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.38	3.30	3E-08		3E-08	
Fluoranthene		2,400	8.06	6.37		0.000003		0.000003
Fluorene		2,400	1.36	1.32		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.41	3.31	3E-09		3E-09	
Naphthalene	2.00E+00	130	3.14	2.54	2E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		3.69	3.51				
Pyrene		1,800	6.67	5.66		0.000004		0.000003
Total Estimates					**8E-08**	**0.006**	**7E-08**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	35.32	26.73	**0.09**	**0.07**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.07	12.69		0.004		0.004
Zinc		23,000	45.01	47.22		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.18	2.13		0.000009		0.000009
Acenaphthene		3,600	0.55	0.55		0.0000002		0.0000002
Anthracene		18,000	2.19	2.18		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.25	2.21	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	2.91	2.63	3E-08	0.0002	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		5.21	4.64	5E-09		4E-09	
Benzo(g,h,i)perylene	not available		3.74	3.57				
Benzo(k)fluoranthene	1.10E+01		2.19	2.20	2E-10		2E-10	
Chrysene	1.10E+02		4.21	3.61	4E-11		3E-11	
Dibenz(a,h)anthracene	1.10E-01		3.37	3.36	3E-08		3E-08	
Fluoranthene		2,400	7.16	5.71		0.000003		0.000002
Fluorene		2,400	1.35	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.68	3.56	3E-09		3E-09	
Naphthalene	2.00E+00	130	2.65	2.24	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		3.45	3.40				
Pyrene		1,800	5.85	5.09		0.000003		0.000003
Total Estimates					**7E-08**	**0.006**	**7E-08**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	13.85	12.53	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005C

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.67	17.40		0.005		0.006
Zinc		23,000	56.12	58.76		0.002		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.03	2.02		0.000008		0.000008
Acenaphthene		3,600	0.54	0.54		0.0000002		0.0000001
Anthracene		18,000	2.20	2.18		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.91	2.66	3E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	3.08	2.79	3E-08	0.0002	3E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		6.67	5.68	6E-09		5E-09	
Benzo(g,h,i)perylene	not available		3.64	3.54				
Benzo(k)fluoranthene	1.10E+01		2.47	2.36	2E-10		2E-10	
Chrysene	1.10E+02		5.58	4.59	5E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.38	3.36	3E-08		3E-08	
Fluoranthene		2,400	6.76	5.30		0.000003		0.000002
Fluorene		2,400	1.35	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.55	3.51	3E-09		3E-09	
Naphthalene	2.00E+00	130	1.53	1.35	8E-10	0.00001	7E-10	0.00001
Phenanthrene	not available		3.48	3.42				
Pyrene		1,800	6.45	5.52		0.000004		0.000003
Total Estimates					**7E-08**	**0.008**	**7E-08**	**0.008**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	12.28	12.34	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005D

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.74	18.07		0.006		0.006
Zinc		23,000	58.54	60.05		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.44	2.29		0.00001		0.00001
Acenaphthene		3,600	0.53	0.52		0.0000001		0.0000001
Anthracene		18,000	2.14	2.12		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.61	2.42	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	3.25	2.87	3E-08	0.0002	3E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		5.78	4.99	5E-09		5E-09	
Benzo(g,h,i)perylene	not available		3.76	3.60				
Benzo(k)fluoranthene	1.10E+01		2.13	2.11	2E-10		2E-10	
Chrysene	1.10E+02		4.83	4.02	4E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.29	3.26	3E-08		3E-08	
Fluoranthene		2,400	6.07	5.04		0.000003		0.000002
Fluorene		2,400	1.32	1.30		0.0000005		0.0000005
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.68	3.52	3E-09		3E-09	
Naphthalene	2.00E+00	130	2.14	1.84	1E-09	0.00002	9E-10	0.00001
Phenanthrene	not available		3.61	3.48				
Pyrene		1,800	5.25	4.58		0.000003		0.000003
Total Estimates					**7E-08**	**0.008**	**7E-08**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	12.67	12.88	**0.0**	**0.0**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005E

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.42	14.41		0.005		0.005
Zinc		23,000	48.32	50.41		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.63	1.55		0.000007		0.000006
Acenaphthene		3,600	0.58	0.56		0.0000002		0.0000002
Anthracene		18,000	2.22	2.19		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		3.66	3.15	3E-09		3E-09	
Benzo(a)pyrene	1.10E-01	18	5.51	4.44	5E-08	0.0003	4E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		7.71	6.38	7E-09		6E-09	
Benzo(g,h,i)perylene	not available		4.00	3.75				
Benzo(k)fluoranthene	1.10E+01		2.87	2.62	3E-10		2E-10	
Chrysene	1.10E+02		5.67	4.62	5E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.41	3.37	3E-08		3E-08	
Fluoranthene		2,400	9.38	7.24		0.000004		0.000003
Fluorene		2,400	1.36	1.35		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.41	4.01	4E-09		4E-09	
Naphthalene	2.00E+00	130	2.75	2.72	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		4.41	5.67				
Pyrene		1,800	7.72	6.36		0.000004		0.000004
Total Estimates					**1E-07**	**0.007**	**8E-08**	**0.007**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.36	11.61	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005F

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.71	14.60		0.005		0.005
Zinc		23,000	48.71	49.29		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.31	1.51		0.000005		0.000006
Acenaphthene		3,600	0.55	0.54		0.0000002		0.0000002
Anthracene		18,000	2.22	2.20		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		3.87	3.30	4E-09		3E-09	
Benzo(a)pyrene	1.10E-01	18	5.87	4.76	5E-08	0.0003	4E-08	0.0003
Benzo(b)fluoranthene	1.10E+00		8.59	7.01	8E-09		6E-09	
Benzo(g,h,i)perylene	not available		4.08	3.81				
Benzo(k)fluoranthene	1.10E+01		3.07	2.76	3E-10		3E-10	
Chrysene	1.10E+02		6.02	4.88	5E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.41	3.39	3E-08		3E-08	
Fluoranthene		2,400	10.19	7.86		0.000004		0.000003
Fluorene		2,400	1.36	1.35		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.63	4.17	4E-09		4E-09	
Naphthalene	2.00E+00	130	2.45	3.20	1E-09	0.00002	2E-09	0.00002
Phenanthrene	not available		4.46	4.05				
Pyrene		1,800	8.69	7.08		0.000005		0.000004
Total Estimates					**1E-07**	**0.007**	**9E-08**	**0.007**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.43	11.38	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005G

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.93	13.67		0.004		0.004
Zinc		23,000	43.76	45.31		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.83	2.03		0.000008		0.000008
Acenaphthene		3,600	0.54	0.54		0.0000001		0.0000001
Anthracene		18,000	2.41	2.33		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		12.64	9.64	1E-08		9E-09	
Benzo(a)pyrene	1.10E-01	18	9.20	7.43	8E-08	0.0005	7E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		12.35	12.68	1E-08		1E-08	
Benzo(g,h,i)perylene	not available		6.31	5.29				
Benzo(k)fluoranthene	1.10E+01		5.61	4.60	5E-10		4E-10	
Chrysene	1.10E+02		11.65	9.79	1E-10		9E-11	
Dibenz(a,h)anthracene	1.10E-01		3.35	3.36	3E-08		3E-08	
Fluoranthene		2,400	14.67	11.90		0.000006		0.000005
Fluorene		2,400	1.34	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		6.79	5.58	6E-09		5E-09	
Naphthalene	2.00E+00	130	2.16	2.06	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		12.17	9.24				
Pyrene		1,800	24.35	18.63		0.00001		0.00001
Total Estimates					**1E-07**	**0.007**	**1E-07**	**0.007**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	12.52	11.73	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005H

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.78	15.69		0.005		0.005
Zinc		23,000	48.43	52.45		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.34	2.35		0.00001		0.00001
Acenaphthene		3,600	0.88	2.15		0.0000002		0.0000006
Anthracene		18,000	2.35	2.27		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		6.68	5.35	6E-09		5E-09	
Benzo(a)pyrene	1.10E-01	18	9.78	7.64	9E-08	0.0005	7E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		11.68	9.22	1E-08		8E-09	
Benzo(g,h,i)perylene	not available		4.78	4.32				
Benzo(k)fluoranthene	1.10E+01		5.09	4.23	5E-10		4E-10	
Chrysene	1.10E+02		9.92	10.08	9E-11		9E-11	
Dibenz(a,h)anthracene	1.10E-01		3.45	3.38	3E-08		3E-08	
Fluoranthene		2,400	17.23	55.59		0.000007		0.00002
Fluorene		2,400	1.38	10.29		0.0000006		0.000004
Indeno(1,2,3-c,d)pyrene	1.10E+00		5.73	4.97	5E-09		5E-09	
Naphthalene	2.00E+00	130	3.23	3.61	2E-09	0.00002	2E-09	0.00003
Phenanthrene	not available		9.45	77.50				
Pyrene		1,800	15.35	14.84		0.000009		0.000008
Total Estimates					**1E-07**	**0.007**	**1E-07**	**0.008**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.03	11.83	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005I

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	10.43	10.46		0.003		0.003
Zinc		23,000	40.40	40.02		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.51	2.40		0.00001		0.00001
Acenaphthene		3,600	0.61	0.58		0.0000002		0.0000002
Anthracene		18,000	2.37	2.26		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		8.89	6.61	8E-09		6E-09	
Benzo(a)pyrene	1.10E-01	18	9.19	6.85	8E-08	0.0005	6E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		13.12	9.79	1E-08		9E-09	
Benzo(g,h,i)perylene	not available		5.66	4.83				
Benzo(k)fluoranthene	1.10E+01		5.61	4.42	5E-10		4E-10	
Chrysene	1.10E+02		12.75	9.21	1E-10		8E-11	
Dibenz(a,h)anthracene	1.10E-01		3.34	3.29	3E-08		3E-08	
Fluoranthene		2,400	19.39	13.74		0.000008		0.000006
Fluorene		2,400	1.34	1.32		0.0000006		0.0000005
Indeno(1,2,3-c,d)pyrene	1.10E+00		6.62	5.47	6E-09		5E-09	
Naphthalene	2.00E+00	130	6.57	4.76	3E-09	0.00005	2E-09	0.00004
Phenanthrene	not available		9.36	7.27				
Pyrene		1,800	16.69	12.18		0.000009		0.000007
Total Estimates					**1E-07**	**0.006**	**1E-07**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	9.48	9.26	**0.02**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005J

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	10.77	10.79		0.003		0.003
Zinc		23,000	40.29	39.80		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.06	2.03		0.000009		0.000008
Acenaphthene		3,600	0.55	0.54		0.0000002		0.0000002
Anthracene		18,000	2.24	2.20		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		2.29	2.22	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	2.33	2.26	2E-08	0.0001	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		4.09	3.80	4E-09		3E-09	
Benzo(g,h,i)perylene	not available		3.44	3.39				
Benzo(k)fluoranthene	1.10E+01		2.24	2.20	2E-10		2E-10	
Chrysene	1.10E+02		3.29	2.96	3E-11		3E-11	
Dibenz(a,h)anthracene	1.10E-01		3.44	3.39	3E-08		3E-08	
Fluoranthene		2,400	4.97	4.09		0.000002		0.000002
Fluorene		2,400	1.38	1.36		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		5.70	4.88	5E-09		4E-09	
Naphthalene	2.00E+00	130	5.25	3.90	3E-09	0.00004	2E-09	0.00003
Phenanthrene	not available		3.44	3.39				
Pyrene		1,800	4.12	3.84		0.000002		0.000002
Total Estimates					**7E-08**	**0.005**	**6E-08**	**0.005**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	9.21	9.24	**0.02**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005K

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.85	15.95		0.005		0.005
Zinc		23,000	51.67	51.75		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	40.39	27.56		0.0002		0.0001
Acenaphthene		3,600	9.34	6.40		0.000003		0.000002
Anthracene		18,000	13.80	9.91		0.0000008		0.0000006
Benz(a)anthracene	1.10E+00		187.80	125.90	2E-07		1E-07	
Benzo(a)pyrene	1.10E-01	18	2.18	2.16	2E-08	0.0001	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		4.83	4.32	4E-09		4E-09	
Benzo(g,h,i)perylene	not available		3.35	3.33				
Benzo(k)fluoranthene	1.10E+01		4.00	3.37	4E-10		3E-10	
Chrysene	1.10E+02		5.16	4.27	5E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.35	3.33	3E-08		3E-08	
Fluoranthene		2,400	4.98	4.08		0.000002		0.000002
Fluorene		2,400	9.52	6.78		0.000004		0.000003
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.38	3.35	3E-09		3E-09	
Naphthalene	2.00E+00	130	697.00	465.40	3E-07	0.005	2E-07	0.004
Phenanthrene	not available		41.97	29.06				
Pyrene		1,800	4.56	4.15		0.000003		0.000002
Total Estimates					**6E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.67	12.04	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005L

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.48	14.23		0.004		0.005
Zinc		23,000	57.75	61.20		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.56	2.32		0.00001		0.00001
Acenaphthene		3,600	0.55	0.53		0.0000002		0.0000001
Anthracene		18,000	2.24	2.17		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		5.79	4.87	5E-09		4E-09	
Benzo(a)pyrene	1.10E-01	18	6.30	5.09	6E-08	0.0004	5E-08	0.0003
Benzo(b)fluoranthene	1.10E+00		11.54	9.19	1E-08		8E-09	
Benzo(g,h,i)perylene	not available		4.50	4.10				
Benzo(k)fluoranthene	1.10E+01		3.38	3.38	3E-10		3E-10	
Chrysene	1.10E+02		9.01	7.10	8E-11		6E-11	
Dibenz(a,h)anthracene	1.10E-01		3.45	3.34	3E-08		3E-08	
Fluoranthene		2,400	12.88	10.02		0.000005		0.000004
Fluorene		2,400	1.38	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.70	5.35	4E-09		5E-09	
Naphthalene	2.00E+00	130	2.80	2.29	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		4.87	4.27				
Pyrene		1,800	11.44	9.15		0.000006		0.000005
Total Estimates					**1E-07**	**0.007**	**1E-07**	**0.008**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	15.36	14.92	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005M

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.40	14.06		0.005		0.005
Zinc		23,000	48.50	47.75		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	5.26	4.43		0.00002		0.00002
Acenaphthene		3,600	0.53	0.52		0.0000001		0.0000001
Anthracene		18,000	2.14	2.13		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		10.02	7.49	9E-09		7E-09	
Benzo(a)pyrene	1.10E-01	18	9.56	7.23	9E-08	0.0005	7E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		15.97	12.08	1E-08		1E-08	
Benzo(g,h,i)perylene	not available		6.12	5.15				
Benzo(k)fluoranthene	1.10E+01		5.03	4.42	5E-10		4E-10	
Chrysene	1.10E+02		12.20	9.12	1E-10		8E-11	
Dibenz(a,h)anthracene	1.10E-01		3.29	3.27	3E-08		3E-08	
Fluoranthene		2,400	18.61	13.60		0.000008		0.000006
Fluorene		2,400	2.48	2.07		0.000001		0.0000009
Indeno(1,2,3-c,d)pyrene	1.10E+00		6.63	5.49	6E-09		5E-09	
Naphthalene	2.00E+00	130	47.35	33.54	2E-08	0.0004	2E-08	0.0003
Phenanthrene	not available		6.36	5.27				
Pyrene		1,800	17.87	13.30		0.00001		0.000007
Total Estimates					**2E-07**	**0.008**	**1E-07**	**0.007**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	10.44	10.23	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005N

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.61	13.55		0.004		0.004
Zinc		23,000	49.27	49.66		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.70	3.61		0.00002		0.00002
Acenaphthene		3,600	6.82	4.77		0.000002		0.000001
Anthracene		18,000	18.05	13.05		0.000001		0.0000007
Benz(a)anthracene	1.10E+00		74.92	52.70	7E-08		5E-08	
Benzo(a)pyrene	1.10E-01	18	78.15	54.95	7E-07	0.004	5E-07	0.003
Benzo(b)fluoranthene	1.10E+00		102.50	72.35	9E-08		7E-08	
Benzo(g,h,i)perylene	not available		42.80	30.57				
Benzo(k)fluoranthene	1.10E+01		41.52	29.33	4E-09		3E-09	
Chrysene	1.10E+02		66.86	47.44	6E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		12.55	9.60	1E-07		9E-08	
Fluoranthene		2,400	83.85	58.14		0.00003		0.00002
Fluorene		2,400	6.06	4.48		0.000003		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		61.27	43.33	6E-08		4E-08	
Naphthalene	2.00E+00	130	7.07	7.48	4E-09	0.00005	4E-09	0.00006
Phenanthrene	not available		85.41	59.77				
Pyrene		1,800	110.80	78.56		0.00006		0.00004
Total Estimates					**1E-06**	**0.01**	**7E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.68	11.24	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31040005O

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	22.31	19.62		0.007		0.006
Zinc		23,000	55.22	55.36		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.31	4.12		0.00001		0.00002
Acenaphthene		3,600	1.84	1.39		0.0000005		0.0000004
Anthracene		18,000	5.71	4.47		0.0000003		0.0000002
Benz(a)anthracene	1.10E+00		36.86	26.06	3E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	34.93	24.98	3E-07	0.002	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		47.67	34.15	4E-08		3E-08	
Benzo(g,h,i)perylene	not available		17.53	13.02				
Benzo(k)fluoranthene	1.10E+01		16.27	11.86	1E-09		1E-09	
Chrysene	1.10E+02		39.47	28.07	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		5.21	4.51	5E-08		4E-08	
Fluoranthene		2,400	76.12	54.35		0.00003		0.00002
Fluorene		2,400	1.48	1.41		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		24.64	17.90	2E-08		2E-08	
Naphthalene	2.00E+00	130	6.63	24.42	3E-09	0.00005	1E-08	0.0002
Phenanthrene	not available		30.66	22.15				
Pyrene		1,800	75.81	53.70		0.00004		0.00003
Total Estimates					**5E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.81	11.61	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404082B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	20.18	19.24		0.007		0.006
Zinc		23,000	85.02	76.26		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.29	2.20		0.00001		0.000009
Acenaphthene		3,600	0.54	0.54		0.0000001		0.0000002
Anthracene		18,000	2.18	2.19		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		3.25	2.87	3E-09		3E-09	
Benzo(a)pyrene	1.10E-01	18	3.13	2.78	3E-08	0.0002	3E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		5.66	4.87	5E-09		4E-09	
Benzo(g,h,i)perylene	not available		3.70	3.55				
Benzo(k)fluoranthene	1.10E+01		2.88	2.63	3E-10		2E-10	
Chrysene	1.10E+02		5.81	4.87	5E-11		4E-11	
Dibenz(a,h)anthracene	1.10E-01		3.35	3.37	3E-08		3E-08	
Fluoranthene		2,400	6.50	5.27		0.000003		0.000002
Fluorene		2,400	1.34	1.35		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.35	3.37	3E-09		3E-09	
Naphthalene	2.00E+00	130	1.73	1.52	9E-10	0.00001	8E-10	0.00001
Phenanthrene	not available		3.78	3.61				
Pyrene		1,800	6.19	5.22		0.000003		0.000003
Total Estimates					**7E-08**	**0.01**	**7E-08**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	16.62	14.50	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404126

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	23.91	21.16		0.008		0.007
Zinc		23,000	153.20	131.00		0.007		0.006
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.33	2.98		0.00001		0.00001
Acenaphthene		3,600	0.55	0.54		0.0000002		0.0000001
Anthracene		18,000	2.23	2.17		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		16.22	12.05	1E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	16.86	12.52	2E-07	0.0009	1E-07	0.0007
Benzo(b)fluoranthene	1.10E+00		26.83	20.07	2E-08		2E-08	
Benzo(g,h,i)perylene	not available		10.80	8.57				
Benzo(k)fluoranthene	1.10E+01		9.55	7.39	9E-10		7E-10	
Chrysene	1.10E+02		24.20	18.00	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		3.44	3.36	3E-08		3E-08	
Fluoranthene		2,400	26.54	19.91		0.00001		0.000008
Fluorene		2,400	1.80	1.64		0.0000008		0.0000007
Indeno(1,2,3-c,d)pyrene	1.10E+00		13.28	10.20	1E-08		9E-09	
Naphthalene	2.00E+00	130	6.35	5.55	3E-09	0.00005	3E-09	0.00004
Phenanthrene	not available		11.58	9.31				
Pyrene		1,800	23.30	17.38		0.00001		0.00001
Total Estimates					**2E-07**	**0.02**	**2E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	23.23	20.20	**0.06**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404127

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	20.59	19.36		0.007		0.006
Zinc		23,000	152.00	127.30		0.007		0.006
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	7.86	6.21		0.00003		0.00003
Acenaphthene		3,600	0.72	0.65		0.0000002		0.0000002
Anthracene		18,000	2.37	2.31		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		37.68	28.98	3E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	43.21	33.11	4E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		64.21	49.01	6E-08		4E-08	
Benzo(g,h,i)perylene	not available		28.24	21.69				
Benzo(k)fluoranthene	1.10E+01		25.48	19.54	2E-09		2E-09	
Chrysene	1.10E+02		48.01	37.57	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		7.46	6.23	7E-08		6E-08	
Fluoranthene		2,400	45.96	36.17		0.00002		0.00002
Fluorene		2,400	1.59	1.49		0.0000007		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		34.71	26.50	3E-08		2E-08	
Naphthalene	2.00E+00	130	18.03	13.93	9E-09	0.0001	7E-09	0.0001
Phenanthrene	not available		12.46	9.79				
Pyrene		1,800	44.00	34.85		0.00002		0.00002
Total Estimates					**6E-07**	**0.02**	**5E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	30.46	26.72	**0.08**	**0.07**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404131

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	19.92	18.25		0.006		0.006
Zinc		23,000	112.30	96.86		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	4.68	3.95		0.00002		0.00002
Acenaphthene		3,600	0.53	0.53		0.0000001		0.0000001
Anthracene		18,000	2.46	2.34		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		7.87	6.19	7E-09		6E-09	
Benzo(a)pyrene	1.10E-01	18	12.76	9.63	1E-07	0.0007	9E-08	0.0005
Benzo(b)fluoranthene	1.10E+00		17.39	13.45	2E-08		1E-08	
Benzo(g,h,i)perylene	not available		14.92	11.70				
Benzo(k)fluoranthene	1.10E+01		4.52	3.84	4E-10		3E-10	
Chrysene	1.10E+02		22.96	17.34	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		3.32	3.30	3E-08		3E-08	
Fluoranthene		2,400	22.20	16.84		0.000009		0.000007
Fluorene		2,400	1.47	1.41		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		8.52	6.91	8E-09		6E-09	
Naphthalene	2.00E+00	130	6.61	6.03	3E-09	0.00005	3E-09	0.00005
Phenanthrene	not available		16.38	12.39				
Pyrene		1,800	18.33	13.99		0.00001		0.000008
Total Estimates					**2E-07**	**0.01**	**1E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	21.88	19.31	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404152_153

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	22.24	23.19		0.007		0.007
Zinc		23,000	92.93	84.75		0.004		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	6.46	4.88		0.00003		0.00002
Acenaphthene		3,600	0.97	0.81		0.0000003		0.0000002
Anthracene		18,000	2.50	2.34		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		16.33	12.62	1E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	24.33	19.05	2E-07	0.001	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		29.91	23.20	3E-08		2E-08	
Benzo(g,h,i)perylene	not available		17.47	14.25				
Benzo(k)fluoranthene	1.10E+01		12.52	9.77	1E-09		9E-10	
Chrysene	1.10E+02		23.50	18.23	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		4.23	3.88	4E-08		4E-08	
Fluoranthene		2,400	32.43	24.80		0.00001		0.00001
Fluorene		2,400	1.40	1.39		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		21.30	16.45	2E-08		1E-08	
Naphthalene	2.00E+00	130	5.48	4.14	3E-09	0.00004	2E-09	0.00003
Phenanthrene	not available		12.16	9.59				
Pyrene		1,800	29.38	22.41		0.00002		0.00001
Total Estimates					**3E-07**	**0.01**	**3E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	19.90	18.39	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404194

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	237.70	163.70		0.08		0.05
Zinc		23,000	70.47	66.45		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.03	2.50		0.00001		0.00001
Acenaphthene		3,600	0.53	0.53		0.0000001		0.0000001
Anthracene		18,000	2.41	2.30		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		5.12	4.25	5E-09		4E-09	
Benzo(a)pyrene	1.10E-01	18	7.01	5.57	6E-08	0.0004	5E-08	0.0003
Benzo(b)fluoranthene	1.10E+00		9.18	7.48	8E-09		7E-09	
Benzo(g,h,i)perylene	not available		5.45	4.80				
Benzo(k)fluoranthene	1.10E+01		3.34	2.97	3E-10		3E-10	
Chrysene	1.10E+02		12.35	9.41	1E-10		9E-11	
Dibenz(a,h)anthracene	1.10E-01		3.33	3.29	3E-08		3E-08	
Fluoranthene		2,400	12.59	9.61		0.000005		0.000004
Fluorene		2,400	1.71	1.56		0.0000007		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.98	4.46	5E-09		4E-09	
Naphthalene	2.00E+00	130	6.85	6.12	3E-09	0.00005	3E-09	0.00005
Phenanthrene	not available		6.43	5.46				
Pyrene		1,800	9.87	7.97		0.000005		0.000004
Total Estimates					**1E-07**	**0.08**	**1E-07**	**0.06**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	12.86	11.98	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 3204549A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.38	14.57		0.005		0.005
Zinc		23,000	106.90	91.28		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.60	2.38		0.00001		0.00001
Acenaphthene		3,600	0.99	0.83		0.0000003		0.0000002
Anthracene		18,000	10.30	7.76		0.0000006		0.0000004
Benz(a)anthracene	1.10E+00		23.83	17.75	2E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	40.29	30.04	4E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		49.15	36.36	4E-08		3E-08	
Benzo(g,h,i)perylene	not available		27.32	20.37				
Benzo(k)fluoranthene	1.10E+01		18.57	13.63	2E-09		1E-09	
Chrysene	1.10E+02		38.06	28.27	3E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		5.73	4.90	5E-08		4E-08	
Fluoranthene		2,400	50.46	37.01		0.00002		0.00002
Fluorene		2,400	1.52	1.44		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		31.02	22.87	3E-08		2E-08	
Naphthalene	2.00E+00	130	2.51	2.05	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		17.81	13.49				
Pyrene		1,800	47.76	35.29		0.00003		0.00002
Total Estimates					**5E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	24.37	20.52	**0.06**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404558

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	51.46	39.48		0.02		0.01
Zinc		23,000	150.20	127.10		0.007		0.006
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.85	3.20		0.00002		0.00001
Acenaphthene		3,600	2.54	2.05		0.0000007		0.0000006
Anthracene		18,000	12.02	9.06		0.0000007		0.0000005
Benz(a)anthracene	1.10E+00		128.00	98.71	1E-07		9E-08	
Benzo(a)pyrene	1.10E-01	18	142.90	113.90	1E-06	0.008	1E-06	0.006
Benzo(b)fluoranthene	1.10E+00		202.40	161.20	2E-07		1E-07	
Benzo(g,h,i)perylene	not available		90.00	72.70				
Benzo(k)fluoranthene	1.10E+01		78.28	60.88	7E-09		6E-09	
Chrysene	1.10E+02		154.30	120.80	1E-09		1E-09	
Dibenz(a,h)anthracene	1.10E-01		28.25	22.19	3E-07		2E-07	
Fluoranthene		2,400	165.90	127.70		0.00007		0.00005
Fluorene		2,400	3.57	2.91		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		100.10	80.02	9E-08		7E-08	
Naphthalene	2.00E+00	130	6.58	5.36	3E-09	0.00005	3E-09	0.00004
Phenanthrene	not available		45.05	35.12				
Pyrene		1,800	163.10	127.60		0.00009		0.00007
Total Estimates					**2E-06**	**0.03**	**2E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	54.45	50.55	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404588

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	18.94	16.71		0.006		0.005
Zinc		23,000	76.28	66.96		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.93	3.30		0.00002		0.00001
Acenaphthene		3,600	0.54	0.53		0.0000001		0.0000001
Anthracene		18,000	10.68	7.82		0.0000006		0.0000004
Benz(a)anthracene	1.10E+00		54.81	37.58	5E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	51.97	35.82	5E-07	0.003	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		75.22	51.98	7E-08		5E-08	
Benzo(g,h,i)perylene	not available		40.45	28.30				
Benzo(k)fluoranthene	1.10E+01		28.36	19.82	3E-09		2E-09	
Chrysene	1.10E+02		60.23	41.58	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		8.28	6.61	8E-08		6E-08	
Fluoranthene		2,400	107.50	73.20		0.00004		0.00003
Fluorene		2,400	1.47	1.41		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		46.68	32.53	4E-08		3E-08	
Naphthalene	2.00E+00	130	8.06	6.53	4E-09	0.00006	3E-09	0.00005
Phenanthrene	not available		51.03	35.26				
Pyrene		1,800	88.12	60.42		0.00005		0.00003
Total Estimates					**7E-07**	**0.01**	**5E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.48	11.50	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404589

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	22.07	20.55		0.007		0.007
Zinc		23,000	69.87	64.63		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.16	2.10		0.000009		0.000009
Acenaphthene		3,600	0.53	0.53		0.0000001		0.0000001
Anthracene		18,000	2.44	2.33		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		4.48	3.78	4E-09		3E-09	
Benzo(a)pyrene	1.10E-01	18	2.46	2.35	2E-08	0.0001	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		11.23	8.94	1E-08		8E-09	
Benzo(g,h,i)perylene	not available		4.22	3.93				
Benzo(k)fluoranthene	1.10E+01		3.68	3.22	3E-10		3E-10	
Chrysene	1.10E+02		11.45	8.90	1E-10		8E-11	
Dibenz(a,h)anthracene	1.10E-01		3.33	3.32	3E-08		3E-08	
Fluoranthene		2,400	15.66	11.88		0.000007		0.000005
Fluorene		2,400	1.49	1.43		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.46	4.10	4E-09		4E-09	
Naphthalene	2.00E+00	130	4.42	3.90	2E-09	0.00003	2E-09	0.00003
Phenanthrene	not available		6.95	5.89				
Pyrene		1,800	11.65	9.17		0.000006		0.000005
Total Estimates					**7E-08**	**0.01**	**7E-08**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	12.25	12.26	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404663A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	21.56	19.12		0.007		0.006
Zinc		23,000	87.93	101.80		0.004		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	9.98	7.16		0.00004		0.00003
Acenaphthene		3,600	46.22	31.36		0.00001		0.000009
Anthracene		18,000	79.43	54.27		0.000004		0.000003
Benz(a)anthracene	1.10E+00		565.80	387.80	5E-07		4E-07	
Benzo(a)pyrene	1.10E-01	18	730.50	501.40	7E-06	0.04	5E-06	0.03
Benzo(b)fluoranthene	1.10E+00		711.40	490.20	6E-07		4E-07	
Benzo(g,h,i)perylene	not available		287.30	199.90				
Benzo(k)fluoranthene	1.10E+01		260.70	180.10	2E-08		2E-08	
Chrysene	1.10E+02		656.10	449.50	6E-09		4E-09	
Dibenz(a,h)anthracene	1.10E-01		99.40	68.76	9E-07		6E-07	
Fluoranthene		2,400	794.40	543.40		0.0003		0.0002
Fluorene		2,400	15.41	10.70		0.000006		0.000004
Indeno(1,2,3-c,d)pyrene	1.10E+00		413.40	286.20	4E-07		3E-07	
Naphthalene	2.00E+00	130	20.32	14.17	1E-08	0.0002	7E-09	0.0001
Phenanthrene	not available		367.10	250.50				
Pyrene		1,800	944.70	644.40		0.0005		0.0004
Total Estimates					**9E-06**	**0.05**	**6E-06**	**0.04**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	113.50	86.30	**0.3**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404668

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	24.91	21.36		0.008		0.007
Zinc		23,000	101.30	90.09		0.004		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	5.59	4.30		0.00002		0.00002
Acenaphthene		3,600	0.72	0.64		0.0000002		0.0000002
Anthracene		18,000	2.42	2.30		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		13.13	10.29	1E-08		9E-09	
Benzo(a)pyrene	1.10E-01	18	17.32	13.01	2E-07	0.001	1E-07	0.0007
Benzo(b)fluoranthene	1.10E+00		22.69	17.94	2E-08		2E-08	
Benzo(g,h,i)perylene	not available		13.75	10.81				
Benzo(k)fluoranthene	1.10E+01		8.55	6.82	8E-10		6E-10	
Chrysene	1.10E+02		20.78	16.51	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		3.60	3.45	3E-08		3E-08	
Fluoranthene		2,400	22.42	17.60		0.000009		0.000007
Fluorene		2,400	1.36	1.33		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		12.74	10.01	1E-08		9E-09	
Naphthalene	2.00E+00	130	9.32	7.28	5E-09	0.00007	4E-09	0.00006
Phenanthrene	not available		10.41	8.30				
Pyrene		1,800	20.19	15.83		0.00001		0.000009
Total Estimates					**2E-07**	**0.01**	**2E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	33.81	29.22	**0.08**	**0.07**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405106

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.04	12.85		0.004		0.004
Zinc		23,000	50.08	48.30		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.24	1.93		0.000009		0.000008
Acenaphthene		3,600	0.56	0.54		0.0000002		0.0000002
Anthracene		18,000	2.30	2.24		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		23.29	17.30	2E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	31.45	23.14	3E-07	0.002	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		44.67	32.87	4E-08		3E-08	
Benzo(g,h,i)perylene	not available		24.05	18.16				
Benzo(k)fluoranthene	1.10E+01		16.59	12.49	2E-09		1E-09	
Chrysene	1.10E+02		35.41	26.02	3E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		5.13	4.57	5E-08		4E-08	
Fluoranthene		2,400	45.59	33.37		0.00002		0.00001
Fluorene		2,400	1.33	1.32		0.0000006		0.0000005
Indeno(1,2,3-c,d)pyrene	1.10E+00		28.88	21.63	3E-08		2E-08	
Naphthalene	2.00E+00	130	6.80	5.25	3E-09	0.00005	3E-09	0.00004
Phenanthrene	not available		15.01	11.63				
Pyrene		1,800	45.74	33.59		0.00003		0.00002
Total Estimates					**4E-07**	**0.008**	**3E-07**	**0.008**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	11.39	10.82	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405107

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	659.10	465.80		0.2		0.2
Zinc		23,000	111.20	96.61		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.45	2.07		0.00001		0.000009
Acenaphthene		3,600	1.27	1.03		0.0000004		0.0000003
Anthracene		18,000	3.80	3.24		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		28.96	22.03	3E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	34.98	26.62	3E-07	0.002	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		50.55	38.83	5E-08		4E-08	
Benzo(g,h,i)perylene	not available		25.88	19.65				
Benzo(k)fluoranthene	1.10E+01		20.41	15.54	2E-09		1E-09	
Chrysene	1.10E+02		50.39	38.09	5E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		6.60	5.56	6E-08		5E-08	
Fluoranthene		2,400	92.52	67.50		0.00004		0.00003
Fluorene		2,400	1.39	1.36		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		31.34	23.78	3E-08		2E-08	
Naphthalene	2.00E+00	130	3.31	3.01	2E-09	0.00003	2E-09	0.00002
Phenanthrene	not available		55.00	38.64				
Pyrene		1,800	84.84	62.50		0.00005		0.00003
Total Estimates					**5E-07**	**0.2**	**4E-07**	**0.2**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	25.74	21.74	**0.06**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405166A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	98.29	74.74		0.03		0.02
Zinc		23,000	114.60	101.80		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.36	2.29		0.00001		0.00001
Acenaphthene		3,600	0.54	0.54		0.0000002		0.0000001
Anthracene		18,000	2.19	2.17		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		6.75	5.40	6E-09		5E-09	
Benzo(a)pyrene	1.10E-01	18	10.41	7.92	9E-08	0.0006	7E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		16.84	12.99	2E-08		1E-08	
Benzo(g,h,i)perylene	not available		7.89	6.56				
Benzo(k)fluoranthene	1.10E+01		6.16	5.00	6E-10		5E-10	
Chrysene	1.10E+02		11.90	9.10	1E-10		8E-11	
Dibenz(a,h)anthracene	1.10E-01		3.36	3.34	3E-08		3E-08	
Fluoranthene		2,400	15.72	11.89		0.000007		0.000005
Fluorene		2,400	1.34	1.33		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		9.18	7.49	8E-09		7E-09	
Naphthalene	2.00E+00	130	2.39	1.98	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		6.02	5.18				
Pyrene		1,800	12.94	10.10		0.000007		0.000006
Total Estimates					**2E-07**	**0.04**	**1E-07**	**0.03**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	17.30	16.07	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405263A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	18.49	17.70		0.006		0.006
Zinc		23,000	109.50	95.76		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	35.67	26.79		0.0001		0.0001
Acenaphthene		3,600	5.59	4.27		0.000002		0.000001
Anthracene		18,000	13.36	11.15		0.0000007		0.0000006
Benz(a)anthracene	1.10E+00		39.25	29.15	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	32.94	25.23	3E-07	0.002	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		69.52	55.31	6E-08		5E-08	
Benzo(g,h,i)perylene	not available		62.64	49.27				
Benzo(k)fluoranthene	1.10E+01		24.27	19.39	2E-09		2E-09	
Chrysene	1.10E+02		62.28	49.67	6E-10		5E-10	
Dibenz(a,h)anthracene	1.10E-01		18.29	16.00	2E-07		1E-07	
Fluoranthene		2,400	90.75	66.24		0.00004		0.00003
Fluorene		2,400	7.74	6.72		0.000003		0.000003
Indeno(1,2,3-c,d)pyrene	1.10E+00		35.81	29.15	3E-08		3E-08	
Naphthalene	2.00E+00	130	8.51	7.39	4E-09	0.00007	4E-09	0.00006
Phenanthrene	not available		60.72	43.51				
Pyrene		1,800	76.13	56.77		0.00004		0.00003
Total Estimates					**6E-07**	**0.01**	**5E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	21.72	19.62	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405265

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	20.04	18.99		0.006		0.006
Zinc		23,000	128.10	112.50		0.006		0.005
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	48.55	35.84		0.0002		0.0001
Acenaphthene		3,600	13.01	9.00		0.000004		0.000003
Anthracene		18,000	44.44	31.16		0.000002		0.000002
Benz(a)anthracene	1.10E+00		184.70	125.90	2E-07		1E-07	
Benzo(a)pyrene	1.10E-01	18	186.00	127.40	2E-06	0.01	1E-06	0.007
Benzo(b)fluoranthene	1.10E+00		261.40	179.90	2E-07		2E-07	
Benzo(g,h,i)perylene	not available		156.70	108.20				
Benzo(k)fluoranthene	1.10E+01		103.80	71.33	9E-09		6E-09	
Chrysene	1.10E+02		235.20	161.60	2E-09		1E-09	
Dibenz(a,h)anthracene	1.10E-01		45.61	32.88	4E-07		3E-07	
Fluoranthene		2,400	308.30	208.60		0.0001		0.00009
Fluorene		2,400	16.06	11.62		0.000007		0.000005
Indeno(1,2,3-c,d)pyrene	1.10E+00		146.60	101.00	1E-07		9E-08	
Naphthalene	2.00E+00	130	9.28	8.24	5E-09	0.00007	4E-09	0.00006
Phenanthrene	not available		229.70	155.20				
Pyrene		1,800	248.30	168.60		0.0001		0.00009
Total Estimates					**3E-06**	**0.02**	**2E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	31.61	29.97	**0.08**	**0.07**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405267

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.72	15.78		0.005		0.005
Zinc		23,000	101.40	87.27		0.004		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.06	2.51		0.00001		0.00001
Acenaphthene		3,600	2.43	1.82		0.0000007		0.0000005
Anthracene		18,000	8.00	6.27		0.0000004		0.0000003
Benz(a)anthracene	1.10E+00		34.77	28.35	3E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	49.33	40.16	4E-07	0.003	4E-07	0.002
Benzo(b)fluoranthene	1.10E+00		65.30	54.54	6E-08		5E-08	
Benzo(g,h,i)perylene	not available		38.49	30.90				
Benzo(k)fluoranthene	1.10E+01		22.94	18.98	2E-09		2E-09	
Chrysene	1.10E+02		51.33	41.71	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		12.61	9.90	1E-07		9E-08	
Fluoranthene		2,400	66.33	55.95		0.00003		0.00002
Fluorene		2,400	4.51	3.42		0.000002		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		38.33	31.32	3E-08		3E-08	
Naphthalene	2.00E+00	130	4.67	3.86	2E-09	0.00004	2E-09	0.00003
Phenanthrene	not available		27.50	22.55				
Pyrene		1,800	65.74	54.23		0.00004		0.00003
Total Estimates					**7E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	90.69	76.11	**0.2**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32427024

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	23.65	20.77		0.008		0.007
Zinc		23,000	43.09	42.03		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.87	1.57		0.000008		0.000007
Acenaphthene		3,600	0.54	0.54		0.0000002		0.0000002
Anthracene		18,000	2.19	2.20		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		4.24	4.45	4E-09		4E-09	
Benzo(a)pyrene	1.10E-01	18	4.88	4.32	4E-08	0.0003	4E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		6.28	5.63	6E-09		5E-09	
Benzo(g,h,i)perylene	not available		3.78	3.65				
Benzo(k)fluoranthene	1.10E+01		2.53	3.37	2E-10		3E-10	
Chrysene	1.10E+02		6.27	6.57	6E-11		6E-11	
Dibenz(a,h)anthracene	1.10E-01		3.37	3.42	3E-08		3E-08	
Fluoranthene		2,400	7.73	6.28		0.000003		0.000003
Fluorene		2,400	1.35	1.35		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		3.86	3.81	4E-09		3E-09	
Naphthalene	2.00E+00	130	1.01	1.10	5E-10	0.000008	6E-10	0.000008
Phenanthrene	not available		3.99	3.72				
Pyrene		1,800	7.33	6.10		0.000004		0.000003
Total Estimates					**9E-08**	**0.01**	**8E-08**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	65.74	51.50	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32436017

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	9.62	12.40		0.003		0.004
Zinc		23,000	27.89	46.67		0.001		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	147.50	79.29		0.0006		0.0003
Acenaphthene		3,600	524.70	283.30		0.0001		0.00008
Anthracene		18,000	2589.00	1560.00		0.0001		0.00009
Benz(a)anthracene	1.10E+00		12571.00	7406.00	1E-05		7E-06	
Benzo(a)pyrene	1.10E-01	18	13283.00	7686.00	1E-04	0.7	7E-05	0.4
Benzo(b)fluoranthene	1.10E+00		17633.00	10303.00	2E-05		9E-06	
Benzo(g,h,i)perylene	not available		8561.00	5048.00				
Benzo(k)fluoranthene	1.10E+01		6648.00	3937.00	6E-07		4E-07	
Chrysene	1.10E+02		14696.00	8759.00	1E-07		8E-08	
Dibenz(a,h)anthracene	1.10E-01		2324.00	1254.00	2E-05		1E-05	
Fluoranthene		2,400	25131.00	15178.00		0.01		0.006
Fluorene		2,400	275.70	154.50		0.0001		0.00006
Indeno(1,2,3-c,d)pyrene	1.10E+00		10438.00	6106.00	9E-06		6E-06	
Naphthalene	2.00E+00	130	491.30	253.80	2E-07	0.004	1E-07	0.002
Phenanthrene	not available		13292.00	8239.00				
Pyrene		1,800	22214.00	13315.00		0.01		0.007
Total Estimates					**2E-04**	**0.8**	**1E-04**	**0.4**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	58.02	30.39	**0.1**	**0.08**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32436028

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	62.78	49.50		0.020		0.02
Zinc		23,000	46.49	46.42		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	4.37	3.43		0.00002		0.00001
Acenaphthene		3,600	2.30	1.80		0.0000006		0.0000005
Anthracene		18,000	6.22	5.23		0.0000003		0.0000003
Benz(a)anthracene	1.10E+00		35.06	31.37	3E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	44.33	41.54	4E-07	0.002	4E-07	0.002
Benzo(b)fluoranthene	1.10E+00		55.44	51.32	5E-08		5E-08	
Benzo(g,h,i)perylene	not available		31.44	29.51				
Benzo(k)fluoranthene	1.10E+01		22.31	21.15	2E-09		2E-09	
Chrysene	1.10E+02		44.16	40.97	4E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		7.57	7.04	7E-08		6E-08	
Fluoranthene		2,400	67.68	59.16		0.00003		0.00002
Fluorene		2,400	1.94	1.73		0.0000008		0.0000007
Indeno(1,2,3-c,d)pyrene	1.10E+00		33.75	31.73	3E-08		3E-08	
Naphthalene	2.00E+00	130	6.16	4.68	3E-09	0.00005	2E-09	0.00004
Phenanthrene	not available		39.88	33.19				
Pyrene		1,800	65.26	57.62		0.00004		0.00003
Total Estimates					**6E-07**	**0.02**	**6E-07**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	15.11	14.26	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32436030

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.46	16.28		0.005		0.005
Zinc		23,000	54.27	55.58		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.92	1.59		0.000008		0.000007
Acenaphthene		3,600	0.54	0.53		0.0000001		0.0000001
Anthracene		18,000	3.43	2.98		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		30.08	24.35	3E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	37.45	30.28	3E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		50.76	41.30	5E-08		4E-08	
Benzo(g,h,i)perylene	not available		28.98	23.40				
Benzo(k)fluoranthene	1.10E+01		20.62	15.87	2E-09		1E-09	
Chrysene	1.10E+02		40.08	32.51	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		6.35	5.44	6E-08		5E-08	
Fluoranthene		2,400	54.23	44.13		0.00002		0.00002
Fluorene		2,400	1.34	1.33		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		33.69	27.35	3E-08		2E-08	
Naphthalene	2.00E+00	130	6.15	4.65	3E-09	0.00005	2E-09	0.00004
Phenanthrene	not available		21.64	17.38				
Pyrene		1,800	53.17	43.33		0.00003		0.00002
Total Estimates					**5E-07**	**0.01**	**4E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	12.88	13.04	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32437017

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.12	17.42		0.006		0.006
Zinc		23,000	57.79	58.70		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	4.72	4.16		0.00002		0.00002
Acenaphthene		3,600	0.57	0.56		0.0000002		0.0000002
Anthracene		18,000	2.23	2.20		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		9.83	8.10	9E-09		7E-09	
Benzo(a)pyrene	1.10E-01	18	13.67	11.29	1E-07	0.0008	1E-07	0.0006
Benzo(b)fluoranthene	1.10E+00		18.76	15.65	2E-08		1E-08	
Benzo(g,h,i)perylene	not available		14.07	11.71				
Benzo(k)fluoranthene	1.10E+01		7.73	6.31	7E-10		6E-10	
Chrysene	1.10E+02		15.36	12.78	1E-10		1E-10	
Dibenz(a,h)anthracene	1.10E-01		3.52	3.43	3E-08		3E-08	
Fluoranthene		2,400	15.25	12.13		0.000006		0.000005
Fluorene		2,400	1.46	1.42		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		13.28	10.89	1E-08		1E-08	
Naphthalene	2.00E+00	130	8.21	7.38	4E-09	0.00006	4E-09	0.00006
Phenanthrene	not available		7.62	6.48				
Pyrene		1,800	15.22	12.17		0.000008		0.000007
Total Estimates					**2E-07**	**0.009**	**2E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	13.25	13.28	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32437019

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.48	17.28		0.006		0.006
Zinc		23,000	73.46	66.64		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.24	1.17		0.000005		0.000005
Acenaphthene		3,600	0.56	0.54		0.0000002		0.0000002
Anthracene		18,000	2.42	2.29		0.0000001		0.0000001
Benz(a)anthracene	1.10E+00		16.10	13.44	1E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	17.90	14.66	2E-07	0.001	1E-07	0.0008
Benzo(b)fluoranthene	1.10E+00		26.27	21.74	2E-08		2E-08	
Benzo(g,h,i)perylene	not available		14.53	11.80				
Benzo(k)fluoranthene	1.10E+01		11.45	9.45	1E-09		9E-10	
Chrysene	1.10E+02		23.10	19.51	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		3.37	3.29	3E-08		3E-08	
Fluoranthene		2,400	29.37	25.00		0.00001		0.00001
Fluorene		2,400	1.34	1.31		0.000001		0.0000005
Indeno(1,2,3-c,d)pyrene	1.10E+00		14.86	12.08	1E-08		1E-08	
Naphthalene	2.00E+00	130	4.95	4.23	2E-09	0.00004	2E-09	0.00003
Phenanthrene	not available		11.73	9.56				
Pyrene		1,800	28.81	24.16		0.00002		0.00001
Total Estimates					**2E-07**	**0.01**	**2E-07**	**0.009**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	14.25	13.93	**0.04**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32439020

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	22.12	20.47		0.007		0.007
Zinc		23,000	66.13	60.28		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.01	0.99		0.00000		0.000004
Acenaphthene		3,600	4.44	3.13		0.000001		0.0000009
Anthracene		18,000	4.23	3.65		0.0000002		0.0000002
Benz(a)anthracene	1.10E+00		37.23	31.29	3E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	52.36	45.71	5E-07	0.003	4E-07	0.003
Benzo(b)fluoranthene	1.10E+00		73.22	62.75	7E-08		6E-08	
Benzo(g,h,i)perylene	not available		45.74	39.47				
Benzo(k)fluoranthene	1.10E+01		26.69	22.69	2E-09		2E-09	
Chrysene	1.10E+02		46.99	39.93	4E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		11.13	9.03	1E-07		8E-08	
Fluoranthene		2,400	64.92	55.05		0.00003		0.00002
Fluorene		2,400	1.35	1.33		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		46.98	40.20	4E-08		4E-08	
Naphthalene	2.00E+00	130	7.25	5.76	4E-09	0.00006	3E-09	0.00004
Phenanthrene	not available		23.79	20.15				
Pyrene		1,800	64.77	54.98		0.00004		0.00003
Total Estimates					**7E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	19.73	18.07	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32439038

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	21.73	19.66		0.007		0.006
Zinc		23,000	51.80	49.14		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.21	2.50		0.00001		0.00001
Acenaphthene		3,600	4.59	3.41		0.000001		0.0000009
Anthracene		18,000	10.93	8.54		0.0000006		0.0000005
Benz(a)anthracene	1.10E+00		88.84	70.45	8E-08		6E-08	
Benzo(a)pyrene	1.10E-01	18	108.30	85.68	1E-06	0.006	8E-07	0.005
Benzo(b)fluoranthene	1.10E+00		131.20	106.30	1E-07		1E-07	
Benzo(g,h,i)perylene	not available		70.79	57.40				
Benzo(k)fluoranthene	1.10E+01		54.84	43.40	5E-09		4E-09	
Chrysene	1.10E+02		123.00	96.59	1E-09		9E-10	
Dibenz(a,h)anthracene	1.10E-01		20.42	15.76	2E-07		1E-07	
Fluoranthene		2,400	138.50	112.50		0.00006		0.00005
Fluorene		2,400	1.38	1.36		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		85.37	69.03	8E-08		6E-08	
Naphthalene	2.00E+00	130	9.53	7.04	5E-09	0.00007	4E-09	0.00005
Phenanthrene	not available		57.34	46.20				
Pyrene		1,800	152.30	121.00		0.00008		0.00007
Total Estimates					**1E-06**	**0.02**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	16.27	14.54	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.65	15.92		0.005		0.005
Zinc		23,000	50.70	52.13		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.51	2.03		0.00001		0.000008
Acenaphthene		3,600	2.13	1.73		0.0000006		0.0000005
Anthracene		18,000	9.97	7.71		0.0000006		0.0000004
Benz(a)anthracene	1.10E+00		49.66	46.76	5E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	52.12	52.58	5E-07	0.003	5E-07	0.003
Benzo(b)fluoranthene	1.10E+00		72.27	72.40	7E-08		7E-08	
Benzo(g,h,i)perylene	not available		37.60	37.84				
Benzo(k)fluoranthene	1.10E+01		31.29	30.92	3E-09		3E-09	
Chrysene	1.10E+02		64.29	61.50	6E-10		6E-10	
Dibenz(a,h)anthracene	1.10E-01		9.92	9.11	9E-08		8E-08	
Fluoranthene		2,400	94.46	84.25		0.00004		0.00004
Fluorene		2,400	1.35	1.34		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		39.74	40.29	4E-08		4E-08	
Naphthalene	2.00E+00	130	5.32	4.50	3E-09	0.00004	2E-09	0.00003
Phenanthrene	not available		49.49	39.72				
Pyrene		1,800	84.46	77.87		0.00005		0.00004
Total Estimates					**7E-07**	**0.01**	**7E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	47.53	35.97	**0.1**	**0.09**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.08	15.85		0.006		0.005
Zinc		23,000	55.35	52.79		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.22	2.59		0.00001		0.00001
Acenaphthene		3,600	2.28	1.77		0.0000006		0.0000005
Anthracene		18,000	7.89	6.22		0.0000004		0.0000003
Benz(a)anthracene	1.10E+00		69.34	55.34	6E-08		5E-08	
Benzo(a)pyrene	1.10E-01	18	94.29	75.06	9E-07	0.005	7E-07	0.004
Benzo(b)fluoranthene	1.10E+00		129.30	103.30	1E-07		9E-08	
Benzo(g,h,i)perylene	not available		71.93	56.90				
Benzo(k)fluoranthene	1.10E+01		45.57	36.25	4E-09		3E-09	
Chrysene	1.10E+02		102.90	81.69	9E-10		7E-10	
Dibenz(a,h)anthracene	1.10E-01		18.40	14.34	2E-07		1E-07	
Fluoranthene		2,400	119.70	95.27		0.00005		0.00004
Fluorene		2,400	1.47	1.42		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		76.74	61.74	7E-08		6E-08	
Naphthalene	2.00E+00	130	5.99	4.91	3E-09	0.00005	2E-09	0.00004
Phenanthrene	not available		45.73	35.36				
Pyrene		1,800	121.00	96.06		0.00007		0.00005
Total Estimates					**1E-06**	**0.01**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	25.07	22.57	**0.06**	**0.06**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement C

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.65	16.58		0.006		0.005
Zinc		23,000	55.58	54.07		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	4.08	3.30		0.00002		0.00001
Acenaphthene		3,600	4.74	3.53		0.000001		0.000001
Anthracene		18,000	10.22	8.00		0.0000006		0.0000004
Benz(a)anthracene	1.10E+00		74.14	61.12	7E-08		6E-08	
Benzo(a)pyrene	1.10E-01	18	86.95	72.54	8E-07	0.005	7E-07	0.004
Benzo(b)fluoranthene	1.10E+00		116.50	97.59	1E-07		9E-08	
Benzo(g,h,i)perylene	not available		60.85	49.72				
Benzo(k)fluoranthene	1.10E+01		48.19	39.30	4E-09		4E-09	
Chrysene	1.10E+02		103.10	85.55	9E-10		8E-10	
Dibenz(a,h)anthracene	1.10E-01		19.54	15.19	2E-07		1E-07	
Fluoranthene		2,400	123.80	101.20		0.00005		0.00004
Fluorene		2,400	1.46	1.41		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		74.28	61.15	7E-08		6E-08	
Naphthalene	2.00E+00	130	8.61	6.89	4E-09	0.00007	3E-09	0.00005
Phenanthrene	not available		55.12	43.75				
Pyrene		1,800	120.80	99.92		0.00007		0.00006
Total Estimates					**1E-06**	**0.01**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	19.73	18.17	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement D

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.24	14.75		0.005		0.005
Zinc		23,000	50.49	50.70		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	13.53	10.19		0.00006		0.00004
Acenaphthene		3,600	7.27	5.48		0.000002		0.000002
Anthracene		18,000	29.68	22.18		0.000002		0.000001
Benz(a)anthracene	1.10E+00		74.23	61.16	7E-08		6E-08	
Benzo(a)pyrene	1.10E-01	18	85.68	70.90	8E-07	0.005	6E-07	0.004
Benzo(b)fluoranthene	1.10E+00		115.30	95.31	1E-07		9E-08	
Benzo(g,h,i)perylene	not available		64.74	53.20				
Benzo(k)fluoranthene	1.10E+01		42.48	35.09	4E-09		3E-09	
Chrysene	1.10E+02		107.30	87.44	1E-09		8E-10	
Dibenz(a,h)anthracene	1.10E-01		45.82	34.11	4E-07		3E-07	
Fluoranthene		2,400	124.60	104.50		0.00005		0.00004
Fluorene		2,400	18.48	13.64		0.000008		0.000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		63.15	52.75	6E-08		5E-08	
Naphthalene	2.00E+00	130	13.03	10.86	7E-09	0.0001	5E-09	0.00008
Phenanthrene	not available		49.62	41.35				
Pyrene		1,800	134.00	110.60		0.00007		0.00006
Total Estimates					**1E-06**	**0.01**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	26.24	21.67	**0.07**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement E

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.61	15.48		0.005		0.005
Zinc		23,000	47.03	46.50		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	9.98	13.41		0.00004		0.00006
Acenaphthene		3,600	5.33	7.16		0.000001		0.000002
Anthracene		18,000	26.38	27.76		0.000001		0.000002
Benz(a)anthracene	1.10E+00		323.30	257.30	3E-07		2E-07	
Benzo(a)pyrene	1.10E-01	18	382.10	304.00	3E-06	0.02	3E-06	0.02
Benzo(b)fluoranthene	1.10E+00		473.20	384.50	4E-07		3E-07	
Benzo(g,h,i)perylene	not available		230.70	191.10				
Benzo(k)fluoranthene	1.10E+01		205.50	162.50	2E-08		1E-08	
Chrysene	1.10E+02		432.90	343.40	4E-09		3E-09	
Dibenz(a,h)anthracene	1.10E-01		57.30	54.13	5E-07		5E-07	
Fluoranthene		2,400	513.50	410.50		0.0002		0.0002
Fluorene		2,400	13.31	17.89		0.000006		0.000007
Indeno(1,2,3-c,d)pyrene	1.10E+00		254.10	210.40	2E-07		2E-07	
Naphthalene	2.00E+00	130	14.29	14.65	7E-09	0.0001	7E-09	0.0001
Phenanthrene	not available		192.40	156.00				
Pyrene		1,800	545.20	430.10		0.0003		0.0002
Total Estimates					**5E-06**	**0.03**	**4E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	19.48	18.75	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement F

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.83	14.22		0.004		0.005
Zinc		23,000	46.31	50.00		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	6.79	5.83		0.00003		0.00002
Acenaphthene		3,600	14.32	12.02		0.000004		0.000003
Anthracene		18,000	41.24	34.59		0.000002		0.000002
Benz(a)anthracene	1.10E+00		346.60	292.90	3E-07		3E-07	
Benzo(a)pyrene	1.10E-01	18	397.80	341.70	4E-06	0.02	3E-06	0.02
Benzo(b)fluoranthene	1.10E+00		562.20	477.40	5E-07		4E-07	
Benzo(g,h,i)perylene	not available		280.30	233.10				
Benzo(k)fluoranthene	1.10E+01		233.10	195.00	2E-08		2E-08	
Chrysene	1.10E+02		412.10	352.00	4E-09		3E-09	
Dibenz(a,h)anthracene	1.10E-01		85.71	70.91	8E-07		6E-07	
Fluoranthene		2,400	488.00	418.30		0.0002		0.0002
Fluorene		2,400	5.97	4.77		0.000002		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		354.70	294.50	3E-07		3E-07	
Naphthalene	2.00E+00	130	15.10	11.89	8E-09	0.0001	6E-09	0.00009
Phenanthrene	not available		194.30	165.40				
Pyrene		1,800	483.20	416.90		0.0003		0.0002
Total Estimates					**6E-06**	**0.03**	**5E-06**	**0.03**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	17.78	16.81	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement G

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	11.67	12.70		0.004		0.004
Zinc		23,000	46.78	47.15		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	10.44	8.82		0.00004		0.00004
Acenaphthene		3,600	33.95	29.66		0.000009		0.000008
Anthracene		18,000	128.50	108.20		0.000007		0.000006
Benz(a)anthracene	1.10E+00		956.80	808.50	9E-07		7E-07	
Benzo(a)pyrene	1.10E-01	18	1143.00	964.60	1E-05	0.06	9E-06	0.05
Benzo(b)fluoranthene	1.10E+00		1513.00	1268.00	1E-06		1E-06	
Benzo(g,h,i)perylene	not available		777.30	653.50				
Benzo(k)fluoranthene	1.10E+01		545.70	459.70	5E-08		4E-08	
Chrysene	1.10E+02		1208.00	1016.00	1E-08		9E-09	
Dibenz(a,h)anthracene	1.10E-01		215.50	178.50	2E-06		2E-06	
Fluoranthene		2,400	1655.00	1386.00		0.0007		0.0006
Fluorene		2,400	16.00	13.08		0.000007		0.000005
Indeno(1,2,3-c,d)pyrene	1.10E+00		818.70	699.90	7E-07		6E-07	
Naphthalene	2.00E+00	130	26.53	25.81	1E-08	0.0002	1E-08	0.00020
Phenanthrene	not available		614.40	526.00				
Pyrene		1,800	1624.00	1370.00		0.0009		0.0008
Total Estimates					**2E-05**	**0.07**	**1E-05**	**0.06**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	48.58	36.39	**0.1**	**0.09**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement H

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.87	13.44		0.004		0.004
Zinc		23,000	46.96	46.48		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	21.22	16.59		0.00009		0.00007
Acenaphthene		3,600	103.30	78.51		0.00003		0.00002
Anthracene		18,000	246.30	195.10		0.00001		0.00001
Benz(a)anthracene	1.10E+00		1251.00	1131.00	1E-06		1E-06	
Benzo(a)pyrene	1.10E-01	18	2073.00	1681.00	2E-05	0.1	2E-05	0.09
Benzo(b)fluoranthene	1.10E+00		2500.00	2068.00	2E-06		2E-06	
Benzo(g,h,i)perylene	not available		1226.00	1030.00				
Benzo(k)fluoranthene	1.10E+01		1046.00	855.80	1E-07		8E-08	
Chrysene	1.10E+02		2199.00	1784.00	2E-08		2E-08	
Dibenz(a,h)anthracene	1.10E-01		300.40	247.40	3E-06		2E-06	
Fluoranthene		2,400	2593.00	2144.00		0.001		0.0009
Fluorene		2,400	33.27	24.19		0.00001		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		1518.00	1275.00	1E-06		1E-06	
Naphthalene	2.00E+00	130	47.61	39.48	2E-08	0.0004	2E-08	0.0003
Phenanthrene	not available		1120.00	904.50				
Pyrene		1,800	2718.00	2217.00		0.002		0.001
Total Estimates					**3E-05**	**0.1**	**2E-05**	**0.1**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	16.19	15.27	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement I

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	23.09	19.65		0.007		0.006
Zinc		23,000	67.97	84.89		0.003		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	46.33	43.07		0.0002		0.0002
Acenaphthene		3,600	176.70	157.90		0.00005		0.00004
Anthracene		18,000	695.20	593.90		0.00004		0.00003
Benz(a)anthracene	1.10E+00		3979.00	3598.00	4E-06		3E-06	
Benzo(a)pyrene	1.10E-01	18	5119.00	4662.00	5E-05	0.3	4E-05	0.3
Benzo(b)fluoranthene	1.10E+00		6063.00	5516.00	6E-06		5E-06	
Benzo(g,h,i)perylene	not available		2963.00	2698.00				
Benzo(k)fluoranthene	1.10E+01		2383.00	2165.00	2E-07		2E-07	
Chrysene	1.10E+02		4848.00	4365.00	4E-08		4E-08	
Dibenz(a,h)anthracene	1.10E-01		773.60	708.40	7E-06		6E-06	
Fluoranthene		2,400	6776.00	6037.00		0.003		0.003
Fluorene		2,400	75.93	65.46		0.00003		0.00003
Indeno(1,2,3-c,d)pyrene	1.10E+00		3456.00	3166.00	3E-06		3E-06	
Naphthalene	2.00E+00	130	142.10	135.00	7E-08	0.001	7E-08	0.001
Phenanthrene	not available		3284.00	2850.00				
Pyrene		1,800	6552.00	5878.00		0.004		0.003
Total Estimates					**7E-05**	**0.3**	**6E-05**	**0.3**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	69.01	51.71	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement J

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.69	13.99		0.005		0.005
Zinc		23,000	54.57	49.65		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	133.40	69.29		0.0006		0.0003
Acenaphthene		3,600	489.90	259.80		0.0001		0.00007
Anthracene		18,000	1416.00	770.50		0.00008		0.00004
Benz(a)anthracene	1.10E+00		10089.00	5094.00	9E-06		5E-06	
Benzo(a)pyrene	1.10E-01	18	11051.00	5886.00	1E-04	0.61	5E-05	0.3
Benzo(b)fluoranthene	1.10E+00		14922.00	7746.00	1E-05		7E-06	
Benzo(g,h,i)perylene	not available		6859.00	3725.00				
Benzo(k)fluoranthene	1.10E+01		5796.00	3087.00	5E-07		3E-07	
Chrysene	1.10E+02		12273.00	6225.00	1E-07		6E-08	
Dibenz(a,h)anthracene	1.10E-01		1956.00	1028.00	2E-05		9E-06	
Fluoranthene		2,400	16435.00	8501.00		0.007		0.004
Fluorene		2,400	246.90	124.40		0.0001		0.00005
Indeno(1,2,3-c,d)pyrene	1.10E+00		7680.00	4229.00	7E-06		4E-06	
Naphthalene	2.00E+00	130	401.30	199.30	2E-07	0.003	1E-07	0.002
Phenanthrene	not available		6753.00	3485.00				
Pyrene		1,800	15982.00	8367.00		0.009		0.005
Total Estimates					**1E-04**	**0.6**	**8E-05**	**0.3**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	39.49	22.11	**0.1**	**0.06**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement K

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.74	14.67		0.005		0.005
Zinc		23,000	58.32	52.26		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	240.60	98.37		0.001		0.0004
Acenaphthene		3,600	845.50	343.30		0.0002		0.0001
Anthracene		18,000	2625.00	1125.00		0.0001		0.00006
Benz(a)anthracene	1.10E+00		16592.00	7637.00	2E-05		7E-06	
Benzo(a)pyrene	1.10E-01	18	18771.00	8644.00	2E-04	1	8E-05	0.5
Benzo(b)fluoranthene	1.10E+00		23500.00	11011.00	2E-05		1E-05	
Benzo(g,h,i)perylene	not available		10658.00	5035.00				
Benzo(k)fluoranthene	1.10E+01		9721.00	4521.00	9E-07		4E-07	
Chrysene	1.10E+02		18306.00	8509.00	2E-07		8E-08	
Dibenz(a,h)anthracene	1.10E-01		3166.00	1475.00	3E-05		1E-05	
Fluoranthene		2,400	27181.00	12856.00		0.01		0.005
Fluorene		2,400	386.00	151.40		0.0002		0.00006
Indeno(1,2,3-c,d)pyrene	1.10E+00		12318.00	5802.00	1E-05		5E-06	
Naphthalene	2.00E+00	130	711.30	283.00	4E-07	0.005	1E-07	0.002
Phenanthrene	not available		10982.00	5176.00				
Pyrene		1,800	26509.00	12314.00		0.01		0.007
Total Estimates					**2E-04**	**1**	**1E-04**	**0.50**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	55.52	34.72	**0.1**	**0.09**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement L

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.93	14.05		0.005		0.005
Zinc		23,000	62.40	54.09		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	552.00	254.60		0.002		0.001
Acenaphthene		3,600	1773.00	842.90		0.0005		0.0002
Anthracene		18,000	6467.00	2939.00		0.0004		0.0002
Benz(a)anthracene	1.10E+00		33727.00	16298.00	3E-05		1E-05	
Benzo(a)pyrene	1.10E-01	18	36139.00	17703.00	3E-04	2	2E-04	1
Benzo(b)fluoranthene	1.10E+00		46068.00	22514.00	4E-05		2E-05	
Benzo(g,h,i)perylene	not available		21014.00	10534.00				
Benzo(k)fluoranthene	1.10E+01		16561.00	8146.00	2E-06		7E-07	
Chrysene	1.10E+02		41169.00	20105.00	4E-07		2E-07	
Dibenz(a,h)anthracene	1.10E-01		6042.00	3024.00	5E-05		3E-05	
Fluoranthene		2,400	63649.00	30172.00		0.03		0.01
Fluorene		2,400	892.50	417.30		0.0004		0.0002
Indeno(1,2,3-c,d)pyrene	1.10E+00		23912.00	11987.00	2E-05		1E-05	
Naphthalene	2.00E+00	130	1725.00	750.90	9E-07	0.01	4E-07	0.006
Phenanthrene	not available		30919.00	14430.00				
Pyrene		1,800	60472.00	28910.00		0.03		0.02
Total Estimates					**5E-04**	**2**	**2E-04**	**1**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	139.80	61.63	**0.3**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement M

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.01	13.60		0.005		0.004
Zinc		23,000	54.95	49.37		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	173.20	77.02		0.0007		0.0003
Acenaphthene		3,600	608.70	253.10		0.0002		0.00007
Anthracene		18,000	2419.00	961.80		0.0001		0.00005
Benz(a)anthracene	1.10E+00		13414.00	5415.00	1E-05		5E-06	
Benzo(a)pyrene	1.10E-01	18	16252.00	6513.00	1E-04	0.9	6E-05	0.4
Benzo(b)fluoranthene	1.10E+00		22135.00	8835.00	2E-05		8E-06	
Benzo(g,h,i)perylene	not available		10792.00	4285.00				
Benzo(k)fluoranthene	1.10E+01		8920.00	3571.00	8E-07		3E-07	
Chrysene	1.10E+02		16594.00	6719.00	2E-07		6E-08	
Dibenz(a,h)anthracene	1.10E-01		2833.00	1127.00	3E-05		1E-05	
Fluoranthene		2,400	24993.00	9931.00		0.01		0.004
Fluorene		2,400	274.70	113.80		0.0001		0.00005
Indeno(1,2,3-c,d)pyrene	1.10E+00		12548.00	4950.00	1E-05		5E-06	
Naphthalene	2.00E+00	130	553.80	246.40	3E-07	0.004	1E-07	0.002
Phenanthrene	not available		11590.00	4609.00				
Pyrene		1,800	24109.00	9618.00		0.01		0.005
Total Estimates					**2E-04**	**0.9**	**9E-05**	**0.4**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	182.90	71.00	**0.5**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement N

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.16	12.71		0.004		0.004
Zinc		23,000	46.68	46.91		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	62.41	32.67		0.0003		0.0001
Acenaphthene		3,600	205.50	112.60		0.00006		0.00003
Anthracene		18,000	453.30	266.60		0.00003		0.00001
Benz(a)anthracene	1.10E+00		3773.00	2209.00	3E-06		2E-06	
Benzo(a)pyrene	1.10E-01	18	4837.00	2756.00	4E-05	0.3	3E-05	0.2
Benzo(b)fluoranthene	1.10E+00		6348.00	3636.00	6E-06		3E-06	
Benzo(g,h,i)perylene	not available		3417.00	1888.00				
Benzo(k)fluoranthene	1.10E+01		2505.00	1445.00	2E-07		1E-07	
Chrysene	1.10E+02		4786.00	2769.00	4E-08		3E-08	
Dibenz(a,h)anthracene	1.10E-01		914.10	503.60	8E-06		5E-06	
Fluoranthene		2,400	6202.00	3659.00		0.003		0.002
Fluorene		2,400	71.56	40.89		0.00003		0.00002
Indeno(1,2,3-c,d)pyrene	1.10E+00		3790.00	2132.00	3E-06		2E-06	
Naphthalene	2.00E+00	130	225.70	114.40	1E-07	0.002	6E-08	0.0009
Phenanthrene	not available		2171.00	1335.00				
Pyrene		1,800	6425.00	3722.00		0.004		0.0021
Total Estimates					**7E-05**	**0.3**	**4E-05**	**0.2**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	195.60	97.96	**0.5**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement O

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.10	13.96		0.005		0.005
Zinc		23,000	52.21	49.19		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	19.64	15.28		0.00008		0.00006
Acenaphthene		3,600	66.08	50.97		0.00002		0.00001
Anthracene		18,000	229.30	180.70		0.00001		0.00001
Benz(a)anthracene	1.10E+00		1620.00	1266.00	1E-06		1E-06	
Benzo(a)pyrene	1.10E-01	18	1987.00	1554.00	2E-05	0.1	1E-05	0.09
Benzo(b)fluoranthene	1.10E+00		2696.00	2103.00	2E-06		2E-06	
Benzo(g,h,i)perylene	not available		1352.00	1053.00				
Benzo(k)fluoranthene	1.10E+01		1143.00	880.10	1E-07		8E-08	
Chrysene	1.10E+02		2079.00	1606.00	2E-08		1E-08	
Dibenz(a,h)anthracene	1.10E-01		369.00	288.40	3E-06		3E-06	
Fluoranthene		2,400	2807.00	2198.00		0.001		0.0009
Fluorene		2,400	28.01	22.11		0.00001		0.000009
Indeno(1,2,3-c,d)pyrene	1.10E+00		1527.00	1200.00	1E-06		1E-06	
Naphthalene	2.00E+00	130	58.73	45.08	3E-08	0.0005	2E-08	0.0003
Phenanthrene	not available		1177.00	920.90				
Pyrene		1,800	2756.00	2147.00		0.002		0.001
Total Estimates					**3E-05**	**0.1**	**2E-05**	**0.1**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	80.21	62.72	**0.2**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement P

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.52	13.86		0.005		0.004
Zinc		23,000	50.22	49.32		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	33.45	23.90		0.0001		0.0001
Acenaphthene		3,600	68.89	49.61		0.00002		0.00001
Anthracene		18,000	145.90	109.70		0.000008		0.000006
Benz(a)anthracene	1.10E+00		951.60	736.20	9E-07		7E-07	
Benzo(a)pyrene	1.10E-01	18	1215.00	939.60	1E-05	0.07	9E-06	0.05
Benzo(b)fluoranthene	1.10E+00		1569.00	1218.00	1E-06		1E-06	
Benzo(g,h,i)perylene	not available		749.20	581.50				
Benzo(k)fluoranthene	1.10E+01		646.00	489.10	6E-08		4E-08	
Chrysene	1.10E+02		1303.00	989.60	1E-08		9E-09	
Dibenz(a,h)anthracene	1.10E-01		201.00	158.10	2E-06		1E-06	
Fluoranthene		2,400	1649.00	1260.00		0.0007		0.0005
Fluorene		2,400	25.38	18.29		0.00001		0.000008
Indeno(1,2,3-c,d)pyrene	1.10E+00		865.50	681.40	8E-07		6E-07	
Naphthalene	2.00E+00	130	109.30	77.22	5E-08	0.0008	4E-08	0.0006
Phenanthrene	not available		733.30	547.50				
Pyrene		1,800	1736.00	1318.00		0.001		0.0007
Total Estimates					**2E-05**	**0.08**	**1E-05**	**0.06**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	178.10	141.80	**0.4**	**0.4**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman - Thompson Easement Q

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.60	14.67		0.005		0.005
Zinc		23,000	49.92	50.33		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	10.05	8.41		0.00004		0.00004
Acenaphthene		3,600	38.61	28.17		0.00001		0.000008
Anthracene		18,000	58.83	46.28		0.000003		0.000003
Benz(a)anthracene	1.10E+00		645.80	481.50	6E-07		4E-07	
Benzo(a)pyrene	1.10E-01	18	867.20	636.80	8E-06	0.05	6E-06	0.04
Benzo(b)fluoranthene	1.10E+00		1105.00	814.60	1E-06		7E-07	
Benzo(g,h,i)perylene	not available		550.70	408.80				
Benzo(k)fluoranthene	1.10E+01		464.20	337.60	4E-08		3E-08	
Chrysene	1.10E+02		744.90	553.20	7E-09		5E-09	
Dibenz(a,h)anthracene	1.10E-01		167.90	122.90	2E-06		1E-06	
Fluoranthene		2,400	1051.00	776.30		0.0004		0.0003
Fluorene		2,400	11.40	8.79		0.000005		0.000004
Indeno(1,2,3-c,d)pyrene	1.10E+00		724.30	529.70	7E-07		5E-07	
Naphthalene	2.00E+00	130	35.06	27.69	2E-08	0.0003	1E-08	0.0002
Phenanthrene	not available		325.50	258.20				
Pyrene		1,800	1074.00	791.40		0.0006		0.0004
Total Estimates					**1E-05**	**0.06**	**9E-06**	**0.04**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res\text{-}lead}$	EPC_{as}/$RSL_{res\text{-}lead}$
Lead	400	94.90	75.72	**0.2**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2021. Values obtained from Residential Soil (Res Soil) Table.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 11:53:15 AM
From File	21063A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.2	Mean	13.38
Maximum	14.2	Median	13.65
SD	1.105	Std. Error of Mean	0.451
Coefficient of Variation	0.0826	Skewness	-2.1
Mean of logged Data	2.591	SD of logged Data	0.0881

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.29	95% Adjusted-CLT UCL (Chen-1995)	13.71
		95% Modified-t UCL (Johnson-1978)	14.23

Nonparametric Distribution Free UCLs

95% CLT UCL	14.13	95% Jackknife UCL	14.29
95% Standard Bootstrap UCL	14.05	95% Bootstrap-t UCL	13.94
95% Hall's Bootstrap UCL	13.8	95% Percentile Bootstrap UCL	13.93
95% BCA Bootstrap UCL	13.87		
90% Chebyshev(Mean, Sd) UCL	14.74	95% Chebyshev(Mean, Sd) UCL	15.35
97.5% Chebyshev(Mean, Sd) UCL	16.2	99% Chebyshev(Mean, Sd) UCL	17.87

Suggested UCL to Use

95% Student's-t UCL	14.29	or 95% Modified-t UCL	14.23

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.14	Mean	11.19
Maximum	12.6	Median	11.25

SD	1.251	Std. Error of Mean	0.511
Coefficient of Variation	0.112	Skewness	-0.711
Mean of logged Data	2.41	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.22	95% Adjusted-CLT UCL (Chen-1995)	11.87
		95% Modified-t UCL (Johnson-1978)	12.19

Nonparametric Distribution Free UCLs

95% CLT UCL	12.03	95% Jackknife UCL	12.22
95% Standard Bootstrap UCL	11.98	95% Bootstrap-t UCL	12.03
95% Hall's Bootstrap UCL	12.04	95% Percentile Bootstrap UCL	11.92
95% BCA Bootstrap UCL	11.87		
90% Chebyshev(Mean, Sd) UCL	12.72	95% Chebyshev(Mean, Sd) UCL	13.42
97.5% Chebyshev(Mean, Sd) UCL	14.38	99% Chebyshev(Mean, Sd) UCL	16.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.2	Mean	45.87
Maximum	47.9	Median	46.7
SD	2.901	Std. Error of Mean	1.185
Coefficient of Variation	0.0633	Skewness	-2.006
Mean of logged Data	3.824	SD of logged Data	0.0662

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.25	95% Adjusted-CLT UCL (Chen-1995)	46.78
		95% Modified-t UCL (Johnson-1978)	48.09

Nonparametric Distribution Free UCLs

95% CLT UCL	47.82	95% Jackknife UCL	48.25
95% Standard Bootstrap UCL	47.65	95% Bootstrap-t UCL	47.33

95% Hall's Bootstrap UCL	46.99	95% Percentile Bootstrap UCL	47.37
95% BCA Bootstrap UCL	47.17		
90% Chebyshev(Mean, Sd) UCL	49.42	95% Chebyshev(Mean, Sd) UCL	51.03
97.5% Chebyshev(Mean, Sd) UCL	53.26	99% Chebyshev(Mean, Sd) UCL	57.65

Suggested UCL to Use

95% Student's-t UCL	48.25	or 95% Modified-t UCL	48.09

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.1	Mean	1.613
Maximum	2.09	Median	1.6
SD	0.354	Std. Error of Mean	0.145
Coefficient of Variation	0.22	Skewness	-0.117
Mean of logged Data	0.457	SD of logged Data	0.229

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.905	95% Adjusted-CLT UCL (Chen-1995)	1.844
		95% Modified-t UCL (Johnson-1978)	1.904

Nonparametric Distribution Free UCLs

95% CLT UCL	1.851	95% Jackknife UCL	1.905
95% Standard Bootstrap UCL	1.83	95% Bootstrap-t UCL	1.918
95% Hall's Bootstrap UCL	1.863	95% Percentile Bootstrap UCL	1.827
95% BCA Bootstrap UCL	1.815		
90% Chebyshev(Mean, Sd) UCL	2.047	95% Chebyshev(Mean, Sd) UCL	2.244
97.5% Chebyshev(Mean, Sd) UCL	2.517	99% Chebyshev(Mean, Sd) UCL	3.053

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.487	Mean	0.702
Maximum	0.984	Median	0.67
SD	0.195	Std. Error of Mean	0.0795
Coefficient of Variation	0.278	Skewness	0.493
Mean of logged Data	-0.386	SD of logged Data	0.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.862	95% Adjusted-CLT UCL (Chen-1995)	0.85
		95% Modified-t UCL (Johnson-1978)	0.865

Nonparametric Distribution Free UCLs

95% CLT UCL	0.833	95% Jackknife UCL	0.862
95% Standard Bootstrap UCL	0.821	95% Bootstrap-t UCL	0.944
95% Hall's Bootstrap UCL	1.053	95% Percentile Bootstrap UCL	0.827
95% BCA Bootstrap UCL	0.827		
90% Chebyshev(Mean, Sd) UCL	0.94	95% Chebyshev(Mean, Sd) UCL	1.049
97.5% Chebyshev(Mean, Sd) UCL	1.199	99% Chebyshev(Mean, Sd) UCL	1.493

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	2.432
Maximum	3.35	Median	2.128
SD	0.555	Std. Error of Mean	0.226
Coefficient of Variation	0.228	Skewness	1.226
Mean of logged Data	0.869	SD of logged Data	0.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.888	95% Adjusted-CLT UCL (Chen-1995)	2.925
		95% Modified-t UCL (Johnson-1978)	2.907

Nonparametric Distribution Free UCLs

95% CLT UCL	2.804	95% Jackknife UCL	2.888
95% Standard Bootstrap UCL	2.772	95% Bootstrap-t UCL	6.125
95% Hall's Bootstrap UCL	7.502	95% Percentile Bootstrap UCL	2.785
95% BCA Bootstrap UCL	2.819		
90% Chebyshev(Mean, Sd) UCL	3.111	95% Chebyshev(Mean, Sd) UCL	3.418
97.5% Chebyshev(Mean, Sd) UCL	3.845	99% Chebyshev(Mean, Sd) UCL	4.684

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.15	Mean	12.64
Maximum	20.8	Median	11.15
SD	5.514	Std. Error of Mean	2.251
Coefficient of Variation	0.436	Skewness	0.703
Mean of logged Data	2.459	SD of logged Data	0.43

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.17	95% Adjusted-CLT UCL (Chen-1995)	17.03
		95% Modified-t UCL (Johnson-1978)	17.28

Nonparametric Distribution Free UCLs

95% CLT UCL	16.34	95% Jackknife UCL	17.17
95% Standard Bootstrap UCL	15.91	95% Bootstrap-t UCL	22
95% Hall's Bootstrap UCL	47.76	95% Percentile Bootstrap UCL	16.09
95% BCA Bootstrap UCL	16.35		
90% Chebyshev(Mean, Sd) UCL	19.39	95% Chebyshev(Mean, Sd) UCL	22.45
97.5% Chebyshev(Mean, Sd) UCL	26.69	99% Chebyshev(Mean, Sd) UCL	35.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	11.3	Mean	17.2
Maximum	27	Median	15.4
SD	6.278	Std. Error of Mean	2.563
Coefficient of Variation	0.365	Skewness	0.831
Mean of logged Data	2.792	SD of logged Data	0.351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.36	95% Adjusted-CLT UCL (Chen-1995)	22.34
		95% Modified-t UCL (Johnson-1978)	22.51

Nonparametric Distribution Free UCLs

95% CLT UCL	21.42	95% Jackknife UCL	22.36
95% Standard Bootstrap UCL	21.06	95% Bootstrap-t UCL	28.17
95% Hall's Bootstrap UCL	46.01	95% Percentile Bootstrap UCL	21.13
95% BCA Bootstrap UCL	21.5		
90% Chebyshev(Mean, Sd) UCL	24.89	95% Chebyshev(Mean, Sd) UCL	28.37
97.5% Chebyshev(Mean, Sd) UCL	33.2	99% Chebyshev(Mean, Sd) UCL	42.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14	Mean	24.88
Maximum	47.9	Median	21
SD	12.47	Std. Error of Mean	5.092
Coefficient of Variation	0.501	Skewness	1.573
Mean of logged Data	3.125	SD of logged Data	0.446

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.14	95% Adjusted-CLT UCL (Chen-1995)	36.75
		95% Modified-t UCL (Johnson-1978)	35.69

Nonparametric Distribution Free UCLs

95% CLT UCL	33.26	95% Jackknife UCL	35.14
95% Standard Bootstrap UCL	32.38	95% Bootstrap-t UCL	50.35

95% Hall's Bootstrap UCL	80.56	95% Percentile Bootstrap UCL	32.77
95% BCA Bootstrap UCL	34.97		
90% Chebyshev(Mean, Sd) UCL	40.16	95% Chebyshev(Mean, Sd) UCL	47.08
97.5% Chebyshev(Mean, Sd) UCL	56.68	99% Chebyshev(Mean, Sd) UCL	75.55

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.79	Mean	12.32
Maximum	18.5	Median	11.05
SD	4.211	Std. Error of Mean	1.719
Coefficient of Variation	0.342	Skewness	0.699
Mean of logged Data	2.464	SD of logged Data	0.334

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.79	95% Adjusted-CLT UCL (Chen-1995)	15.68
		95% Modified-t UCL (Johnson-1978)	15.87

Nonparametric Distribution Free UCLs

95% CLT UCL	15.15	95% Jackknife UCL	15.79
95% Standard Bootstrap UCL	14.9	95% Bootstrap-t UCL	19.46
95% Hall's Bootstrap UCL	43.17	95% Percentile Bootstrap UCL	15.03
95% BCA Bootstrap UCL	15.38		
90% Chebyshev(Mean, Sd) UCL	17.48	95% Chebyshev(Mean, Sd) UCL	19.82
97.5% Chebyshev(Mean, Sd) UCL	23.06	99% Chebyshev(Mean, Sd) UCL	29.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.74	Mean	9.587
Maximum	18.2	Median	7.895
SD	4.678	Std. Error of Mean	1.91

Coefficient of Variation	0.488	Skewness	1.591
Mean of logged Data	2.177	SD of logged Data	0.429

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.43	95% Adjusted-CLT UCL (Chen-1995)	14.05
		95% Modified-t UCL (Johnson-1978)	13.64

Nonparametric Distribution Free UCLs

95% CLT UCL	12.73	95% Jackknife UCL	13.43
95% Standard Bootstrap UCL	12.45	95% Bootstrap-t UCL	21.52
95% Hall's Bootstrap UCL	30.94	95% Percentile Bootstrap UCL	12.56
95% BCA Bootstrap UCL	13.43		
90% Chebyshev(Mean, Sd) UCL	15.32	95% Chebyshev(Mean, Sd) UCL	17.91
97.5% Chebyshev(Mean, Sd) UCL	21.51	99% Chebyshev(Mean, Sd) UCL	28.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.95	Mean	21.19
Maximum	52.2	Median	15.55
SD	15.69	Std. Error of Mean	6.406
Coefficient of Variation	0.74	Skewness	2.122
Mean of logged Data	2.887	SD of logged Data	0.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.1	95% Adjusted-CLT UCL (Chen-1995)	37.66
		95% Modified-t UCL (Johnson-1978)	35.03

Nonparametric Distribution Free UCLs

95% CLT UCL	31.73	95% Jackknife UCL	34.1
95% Standard Bootstrap UCL	30.65	95% Bootstrap-t UCL	70.36
95% Hall's Bootstrap UCL	86.72	95% Percentile Bootstrap UCL	33.18
95% BCA Bootstrap UCL	35.35		
90% Chebyshev(Mean, Sd) UCL	40.41	95% Chebyshev(Mean, Sd) UCL	49.12
97.5% Chebyshev(Mean, Sd) UCL	61.2	99% Chebyshev(Mean, Sd) UCL	84.93

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.42	Mean	3.444
Maximum	4.77	Median	3.368
SD	0.896	Std. Error of Mean	0.366
Coefficient of Variation	0.26	Skewness	0.414
Mean of logged Data	1.208	SD of logged Data	0.26

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.181	95% Adjusted-CLT UCL (Chen-1995)	4.112
		95% Modified-t UCL (Johnson-1978)	4.191

Nonparametric Distribution Free UCLs

95% CLT UCL	4.046	95% Jackknife UCL	4.181
95% Standard Bootstrap UCL	3.987	95% Bootstrap-t UCL	4.327
95% Hall's Bootstrap UCL	4.34	95% Percentile Bootstrap UCL	4.018
95% BCA Bootstrap UCL	3.983		
90% Chebyshev(Mean, Sd) UCL	4.541	95% Chebyshev(Mean, Sd) UCL	5.038
97.5% Chebyshev(Mean, Sd) UCL	5.727	99% Chebyshev(Mean, Sd) UCL	7.082

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.2	Mean	30.03
Maximum	81.3	Median	20
SD	26.04	Std. Error of Mean	10.63
Coefficient of Variation	0.867	Skewness	2.097
Mean of logged Data	3.174	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.45	95% Adjusted-CLT UCL (Chen-1995)	57.24
		95% Modified-t UCL (Johnson-1978)	52.97

Nonparametric Distribution Free UCLs

95% CLT UCL	47.52	95% Jackknife UCL	51.45
95% Standard Bootstrap UCL	45.89	95% Bootstrap-t UCL	123
95% Hall's Bootstrap UCL	137.5	95% Percentile Bootstrap UCL	48.68
95% BCA Bootstrap UCL	52.65		
90% Chebyshev(Mean, Sd) UCL	61.92	95% Chebyshev(Mean, Sd) UCL	76.37
97.5% Chebyshev(Mean, Sd) UCL	96.41	99% Chebyshev(Mean, Sd) UCL	135.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.981	Mean	1.234
Maximum	1.315	Median	1.285
SD	0.127	Std. Error of Mean	0.0519
Coefficient of Variation	0.103	Skewness	-2.208
Mean of logged Data	0.206	SD of logged Data	0.112

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.339	95% Adjusted-CLT UCL (Chen-1995)	1.27
		95% Modified-t UCL (Johnson-1978)	1.331

Nonparametric Distribution Free UCLs

95% CLT UCL	1.32	95% Jackknife UCL	1.339
95% Standard Bootstrap UCL	1.314	95% Bootstrap-t UCL	1.307
95% Hall's Bootstrap UCL	1.282	95% Percentile Bootstrap UCL	1.295
95% BCA Bootstrap UCL	1.287		
90% Chebyshev(Mean, Sd) UCL	1.39	95% Chebyshev(Mean, Sd) UCL	1.461
97.5% Chebyshev(Mean, Sd) UCL	1.558	99% Chebyshev(Mean, Sd) UCL	1.751

Suggested UCL to Use

95% Student's-t UCL	1.339	or 95% Modified-t UCL	1.331

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.44	Mean	12.93
Maximum	21	Median	11.3
SD	4.961	Std. Error of Mean	2.025
Coefficient of Variation	0.384	Skewness	1.008
Mean of logged Data	2.503	SD of logged Data	0.362

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.01	95% Adjusted-CLT UCL (Chen-1995)	17.16
		95% Modified-t UCL (Johnson-1978)	17.15

Nonparametric Distribution Free UCLs

95% CLT UCL	16.26	95% Jackknife UCL	17.01
95% Standard Bootstrap UCL	15.95	95% Bootstrap-t UCL	22.85
95% Hall's Bootstrap UCL	42.36	95% Percentile Bootstrap UCL	16.12
95% BCA Bootstrap UCL	16.61		
90% Chebyshev(Mean, Sd) UCL	19.01	95% Chebyshev(Mean, Sd) UCL	21.76
97.5% Chebyshev(Mean, Sd) UCL	25.58	99% Chebyshev(Mean, Sd) UCL	33.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.32	Mean	2.847
Maximum	3.73	Median	2.635
SD	0.599	Std. Error of Mean	0.244
Coefficient of Variation	0.21	Skewness	0.808
Mean of logged Data	1.029	SD of logged Data	0.202

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.339	95% Adjusted-CLT UCL (Chen-1995)	3.335
		95% Modified-t UCL (Johnson-1978)	3.352

Nonparametric Distribution Free UCLs

95% CLT UCL	3.249	95% Jackknife UCL	3.339
95% Standard Bootstrap UCL	3.213	95% Bootstrap-t UCL	3.986
95% Hall's Bootstrap UCL	6.243	95% Percentile Bootstrap UCL	3.23
95% BCA Bootstrap UCL	3.24		
90% Chebyshev(Mean, Sd) UCL	3.58	95% Chebyshev(Mean, Sd) UCL	3.912
97.5% Chebyshev(Mean, Sd) UCL	4.373	99% Chebyshev(Mean, Sd) UCL	5.278

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.13	Mean	11.18
Maximum	24.8	Median	8.46
SD	7.584	Std. Error of Mean	3.096
Coefficient of Variation	0.678	Skewness	1.432
Mean of logged Data	2.246	SD of logged Data	0.618

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.42	95% Adjusted-CLT UCL (Chen-1995)	18.21
		95% Modified-t UCL (Johnson-1978)	17.72

Nonparametric Distribution Free UCLs

95% CLT UCL	16.28	95% Jackknife UCL	17.42
95% Standard Bootstrap UCL	15.86	95% Bootstrap-t UCL	24.64
95% Hall's Bootstrap UCL	37.1	95% Percentile Bootstrap UCL	16.58
95% BCA Bootstrap UCL	17.33		
90% Chebyshev(Mean, Sd) UCL	20.47	95% Chebyshev(Mean, Sd) UCL	24.68
97.5% Chebyshev(Mean, Sd) UCL	30.52	99% Chebyshev(Mean, Sd) UCL	41.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12	Mean	27.15
Maximum	69.1	Median	19.2
SD	21.38	Std. Error of Mean	8.728
Coefficient of Variation	0.787	Skewness	2.063
Mean of logged Data	3.11	SD of logged Data	0.629

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.74	95% Adjusted-CLT UCL (Chen-1995)	49.36
		95% Modified-t UCL (Johnson-1978)	45.96

Nonparametric Distribution Free UCLs

95% CLT UCL	41.51	95% Jackknife UCL	44.74
95% Standard Bootstrap UCL	39.93	95% Bootstrap-t UCL	97.44
95% Hall's Bootstrap UCL	114.1	95% Percentile Bootstrap UCL	42.23
95% BCA Bootstrap UCL	46.25		
90% Chebyshev(Mean, Sd) UCL	53.33	95% Chebyshev(Mean, Sd) UCL	65.19
97.5% Chebyshev(Mean, Sd) UCL	81.66	99% Chebyshev(Mean, Sd) UCL	114

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 1:26:30 PM
From File	21063B.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	14.1	Mean	14.97
Maximum	15.4	Median	15.1
SD	0.459	Std. Error of Mean	0.187
Coefficient of Variation	0.0307	Skewness	-1.689
Mean of logged Data	2.705	SD of logged Data	0.0312

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.34	95% Adjusted-CLT UCL (Chen-1995)	15.14
		95% Modified-t UCL (Johnson-1978)	15.32

Nonparametric Distribution Free UCLs

95% CLT UCL	15.27	95% Jackknife UCL	15.34
95% Standard Bootstrap UCL	15.25	95% Bootstrap-t UCL	15.22
95% Hall's Bootstrap UCL	15.17	95% Percentile Bootstrap UCL	15.23
95% BCA Bootstrap UCL	15.17		
90% Chebyshev(Mean, Sd) UCL	15.53	95% Chebyshev(Mean, Sd) UCL	15.78
97.5% Chebyshev(Mean, Sd) UCL	16.14	99% Chebyshev(Mean, Sd) UCL	16.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.3	Mean	14
Maximum	16.5	Median	13.8
SD	1.713	Std. Error of Mean	0.7
Coefficient of Variation	0.122	Skewness	0.444

Mean of logged Data	2.633	SD of logged Data	0.121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.41	95% Adjusted-CLT UCL (Chen-1995)	15.29
		95% Modified-t UCL (Johnson-1978)	15.43

Nonparametric Distribution Free UCLs

95% CLT UCL	15.15	95% Jackknife UCL	15.41
95% Standard Bootstrap UCL	15.08	95% Bootstrap-t UCL	15.74
95% Hall's Bootstrap UCL	14.84	95% Percentile Bootstrap UCL	15.08
95% BCA Bootstrap UCL	15.13		
90% Chebyshev(Mean, Sd) UCL	16.1	95% Chebyshev(Mean, Sd) UCL	17.05
97.5% Chebyshev(Mean, Sd) UCL	18.37	99% Chebyshev(Mean, Sd) UCL	20.96

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	49.1	Mean	53.43
Maximum	56	Median	53.8
SD	2.578	Std. Error of Mean	1.053
Coefficient of Variation	0.0482	Skewness	-0.943
Mean of logged Data	3.977	SD of logged Data	0.0491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.55	95% Adjusted-CLT UCL (Chen-1995)	54.73
		95% Modified-t UCL (Johnson-1978)	55.49

Nonparametric Distribution Free UCLs

95% CLT UCL	55.16	95% Jackknife UCL	55.55
95% Standard Bootstrap UCL	55	95% Bootstrap-t UCL	55.11
95% Hall's Bootstrap UCL	54.74	95% Percentile Bootstrap UCL	54.92
95% BCA Bootstrap UCL	54.7		
90% Chebyshev(Mean, Sd) UCL	56.59	95% Chebyshev(Mean, Sd) UCL	58.02
97.5% Chebyshev(Mean, Sd) UCL	60.01	99% Chebyshev(Mean, Sd) UCL	63.91

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.58	Mean	3.053
Maximum	3.995	Median	3.47
SD	1.121	Std. Error of Mean	0.457
Coefficient of Variation	0.367	Skewness	-0.587
Mean of logged Data	1.048	SD of logged Data	0.422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.975	95% Adjusted-CLT UCL (Chen-1995)	3.689
		95% Modified-t UCL (Johnson-1978)	3.957

Nonparametric Distribution Free UCLs

95% CLT UCL	3.806	95% Jackknife UCL	3.975
95% Standard Bootstrap UCL	3.76	95% Bootstrap-t UCL	3.913
95% Hall's Bootstrap UCL	3.526	95% Percentile Bootstrap UCL	3.654
95% BCA Bootstrap UCL	3.636		
90% Chebyshev(Mean, Sd) UCL	4.426	95% Chebyshev(Mean, Sd) UCL	5.048
97.5% Chebyshev(Mean, Sd) UCL	5.91	99% Chebyshev(Mean, Sd) UCL	7.605

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.397	Mean	1.333
Maximum	2.135	Median	1.449

SD	0.877	Std. Error of Mean	0.358
Coefficient of Variation	0.658	Skewness	-0.0948
Mean of logged Data	0.0455	SD of logged Data	0.811

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.054	95% Adjusted-CLT UCL (Chen-1995)	1.907
		95% Modified-t UCL (Johnson-1978)	2.052

Nonparametric Distribution Free UCLs

95% CLT UCL	1.922	95% Jackknife UCL	2.054
95% Standard Bootstrap UCL	1.89	95% Bootstrap-t UCL	2.06
95% Hall's Bootstrap UCL	1.652	95% Percentile Bootstrap UCL	1.849
95% BCA Bootstrap UCL	1.849		
90% Chebyshev(Mean, Sd) UCL	2.407	95% Chebyshev(Mean, Sd) UCL	2.894
97.5% Chebyshev(Mean, Sd) UCL	3.569	99% Chebyshev(Mean, Sd) UCL	4.896

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.49	Mean	5.138
Maximum	8.65	Median	5.185
SD	3.393	Std. Error of Mean	1.385
Coefficient of Variation	0.66	Skewness	-0.0201
Mean of logged Data	1.394	SD of logged Data	0.813

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.93	95% Adjusted-CLT UCL (Chen-1995)	7.405
		95% Modified-t UCL (Johnson-1978)	7.928

Nonparametric Distribution Free UCLs

95% CLT UCL	7.417	95% Jackknife UCL	7.93
95% Standard Bootstrap UCL	7.181	95% Bootstrap-t UCL	8.4

95% Hall's Bootstrap UCL	6.575	95% Percentile Bootstrap UCL	7.242
95% BCA Bootstrap UCL	7.233		
90% Chebyshev(Mean, Sd) UCL	9.294	95% Chebyshev(Mean, Sd) UCL	11.18
97.5% Chebyshev(Mean, Sd) UCL	13.79	99% Chebyshev(Mean, Sd) UCL	18.92

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.6	Mean	21.23
Maximum	33.9	Median	20.65
SD	9.329	Std. Error of Mean	3.809
Coefficient of Variation	0.439	Skewness	0.228
Mean of logged Data	2.968	SD of logged Data	0.47

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.91	95% Adjusted-CLT UCL (Chen-1995)	27.88
		95% Modified-t UCL (Johnson-1978)	28.97

Nonparametric Distribution Free UCLs

95% CLT UCL	27.5	95% Jackknife UCL	28.91
95% Standard Bootstrap UCL	26.86	95% Bootstrap-t UCL	29.19
95% Hall's Bootstrap UCL	29.11	95% Percentile Bootstrap UCL	27.33
95% BCA Bootstrap UCL	26.9		
90% Chebyshev(Mean, Sd) UCL	32.66	95% Chebyshev(Mean, Sd) UCL	37.84
97.5% Chebyshev(Mean, Sd) UCL	45.02	99% Chebyshev(Mean, Sd) UCL	59.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	12.3	Mean	27.25
Maximum	39.5	Median	28.7
SD	11.63	Std. Error of Mean	4.749
Coefficient of Variation	0.427	Skewness	-0.239
Mean of logged Data	3.215	SD of logged Data	0.484

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.82	95% Adjusted-CLT UCL (Chen-1995)	34.57
		95% Modified-t UCL (Johnson-1978)	36.74

Nonparametric Distribution Free UCLs

95% CLT UCL	35.06	95% Jackknife UCL	36.82
95% Standard Bootstrap UCL	34.43	95% Bootstrap-t UCL	35.97
95% Hall's Bootstrap UCL	32.42	95% Percentile Bootstrap UCL	34.07
95% BCA Bootstrap UCL	34.3		
90% Chebyshev(Mean, Sd) UCL	41.5	95% Chebyshev(Mean, Sd) UCL	47.95
97.5% Chebyshev(Mean, Sd) UCL	56.91	99% Chebyshev(Mean, Sd) UCL	74.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.9	Mean	39.23
Maximum	57.6	Median	42.05
SD	15.65	Std. Error of Mean	6.388
Coefficient of Variation	0.399	Skewness	-0.349
Mean of logged Data	3.59	SD of logged Data	0.46

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.1	95% Adjusted-CLT UCL (Chen-1995)	48.77
		95% Modified-t UCL (Johnson-1978)	51.95

Nonparametric Distribution Free UCLs

95% CLT UCL	49.74	95% Jackknife UCL	52.1
95% Standard Bootstrap UCL	48.85	95% Bootstrap-t UCL	50.66
95% Hall's Bootstrap UCL	47.06	95% Percentile Bootstrap UCL	48.93
95% BCA Bootstrap UCL	47.92		
90% Chebyshev(Mean, Sd) UCL	58.4	95% Chebyshev(Mean, Sd) UCL	67.08
97.5% Chebyshev(Mean, Sd) UCL	79.12	99% Chebyshev(Mean, Sd) UCL	102.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	31.18
Maximum	46.2	Median	33.95
SD	13.84	Std. Error of Mean	5.651
Coefficient of Variation	0.444	Skewness	-0.525
Mean of logged Data	3.329	SD of logged Data	0.557

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.57	95% Adjusted-CLT UCL (Chen-1995)	39.18
		95% Modified-t UCL (Johnson-1978)	42.37

Nonparametric Distribution Free UCLs

95% CLT UCL	40.48	95% Jackknife UCL	42.57
95% Standard Bootstrap UCL	39.71	95% Bootstrap-t UCL	40.95
95% Hall's Bootstrap UCL	38.53	95% Percentile Bootstrap UCL	39.12
95% BCA Bootstrap UCL	38.67		
90% Chebyshev(Mean, Sd) UCL	48.13	95% Chebyshev(Mean, Sd) UCL	55.81
97.5% Chebyshev(Mean, Sd) UCL	66.47	99% Chebyshev(Mean, Sd) UCL	87.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.73	Mean	16.36
Maximum	24.4	Median	16.4
SD	7.321	Std. Error of Mean	2.989
Coefficient of Variation	0.448	Skewness	-0.0257
Mean of logged Data	2.699	SD of logged Data	0.495

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.38	95% Adjusted-CLT UCL (Chen-1995)	21.24
		95% Modified-t UCL (Johnson-1978)	22.38

Nonparametric Distribution Free UCLs

95% CLT UCL	21.27	95% Jackknife UCL	22.38
95% Standard Bootstrap UCL	20.8	95% Bootstrap-t UCL	22.67
95% Hall's Bootstrap UCL	20.69	95% Percentile Bootstrap UCL	20.84
95% BCA Bootstrap UCL	20.77		
90% Chebyshev(Mean, Sd) UCL	25.32	95% Chebyshev(Mean, Sd) UCL	29.39
97.5% Chebyshev(Mean, Sd) UCL	35.02	99% Chebyshev(Mean, Sd) UCL	46.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.4	Mean	32.17
Maximum	47	Median	32.9
SD	13.05	Std. Error of Mean	5.327
Coefficient of Variation	0.406	Skewness	-0.123
Mean of logged Data	3.392	SD of logged Data	0.449

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.9	95% Adjusted-CLT UCL (Chen-1995)	40.64
		95% Modified-t UCL (Johnson-1978)	42.86

Nonparametric Distribution Free UCLs

95% CLT UCL	40.93	95% Jackknife UCL	42.9
95% Standard Bootstrap UCL	40.39	95% Bootstrap-t UCL	42.86
95% Hall's Bootstrap UCL	40.58	95% Percentile Bootstrap UCL	39.83
95% BCA Bootstrap UCL	39.9		
90% Chebyshev(Mean, Sd) UCL	48.15	95% Chebyshev(Mean, Sd) UCL	55.38
97.5% Chebyshev(Mean, Sd) UCL	65.43	99% Chebyshev(Mean, Sd) UCL	85.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.27	Mean	9.405
Maximum	13.35	Median	11.02
SD	4.624	Std. Error of Mean	1.888
Coefficient of Variation	0.492	Skewness	-0.538
Mean of logged Data	2.104	SD of logged Data	0.618

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.21	95% Adjusted-CLT UCL (Chen-1995)	12.07
		95% Modified-t UCL (Johnson-1978)	13.14

Nonparametric Distribution Free UCLs

95% CLT UCL	12.51	95% Jackknife UCL	13.21
95% Standard Bootstrap UCL	12.26	95% Bootstrap-t UCL	12.98
95% Hall's Bootstrap UCL	11.45	95% Percentile Bootstrap UCL	12.52
95% BCA Bootstrap UCL	11.81		
90% Chebyshev(Mean, Sd) UCL	15.07	95% Chebyshev(Mean, Sd) UCL	17.63
97.5% Chebyshev(Mean, Sd) UCL	21.2	99% Chebyshev(Mean, Sd) UCL	28.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.7	Mean	36.45
Maximum	62.6	Median	33.6
SD	17.16	Std. Error of Mean	7.007
Coefficient of Variation	0.471	Skewness	0.569
Mean of logged Data	3.502	SD of logged Data	0.478

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.57	95% Adjusted-CLT UCL (Chen-1995)	49.71
		95% Modified-t UCL (Johnson-1978)	50.84

Nonparametric Distribution Free UCLs

95% CLT UCL	47.98	95% Jackknife UCL	50.57
95% Standard Bootstrap UCL	47.19	95% Bootstrap-t UCL	56.87
95% Hall's Bootstrap UCL	45.65	95% Percentile Bootstrap UCL	47.05
95% BCA Bootstrap UCL	47.05		
90% Chebyshev(Mean, Sd) UCL	57.47	95% Chebyshev(Mean, Sd) UCL	66.99
97.5% Chebyshev(Mean, Sd) UCL	80.21	99% Chebyshev(Mean, Sd) UCL	106.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.215	Mean	3.294
Maximum	5.35	Median	3.28
SD	2.216	Std. Error of Mean	0.905
Coefficient of Variation	0.673	Skewness	2.6655E-4
Mean of logged Data	0.955	SD of logged Data	0.784

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.117	95% Adjusted-CLT UCL (Chen-1995)	4.782
		95% Modified-t UCL (Johnson-1978)	5.117

Nonparametric Distribution Free UCLs

95% CLT UCL	4.782	95% Jackknife UCL	5.117
95% Standard Bootstrap UCL	4.618	95% Bootstrap-t UCL	5.099
95% Hall's Bootstrap UCL	4.019	95% Percentile Bootstrap UCL	4.657
95% BCA Bootstrap UCL	4.643		
90% Chebyshev(Mean, Sd) UCL	6.008	95% Chebyshev(Mean, Sd) UCL	7.238
97.5% Chebyshev(Mean, Sd) UCL	8.944	99% Chebyshev(Mean, Sd) UCL	12.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.4	Mean	27.4
Maximum	41.1	Median	28.55
SD	12.32	Std. Error of Mean	5.032
Coefficient of Variation	0.45	Skewness	-0.284
Mean of logged Data	3.205	SD of logged Data	0.534

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.54	95% Adjusted-CLT UCL (Chen-1995)	35.05
		95% Modified-t UCL (Johnson-1978)	37.44

Nonparametric Distribution Free UCLs

95% CLT UCL	35.68	95% Jackknife UCL	37.54
95% Standard Bootstrap UCL	34.89	95% Bootstrap-t UCL	37.14
95% Hall's Bootstrap UCL	33.37	95% Percentile Bootstrap UCL	34.6
95% BCA Bootstrap UCL	34.43		
90% Chebyshev(Mean, Sd) UCL	42.49	95% Chebyshev(Mean, Sd) UCL	49.33
97.5% Chebyshev(Mean, Sd) UCL	58.82	99% Chebyshev(Mean, Sd) UCL	77.46

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.7	Mean	3.77
Maximum	4.77	Median	3.813
SD	0.682	Std. Error of Mean	0.278
Coefficient of Variation	0.181	Skewness	-0.207
Mean of logged Data	1.313	SD of logged Data	0.189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.331	95% Adjusted-CLT UCL (Chen-1995)	4.203
		95% Modified-t UCL (Johnson-1978)	4.327

Nonparametric Distribution Free UCLs

95% CLT UCL	4.228	95% Jackknife UCL	4.331
95% Standard Bootstrap UCL	4.183	95% Bootstrap-t UCL	4.284
95% Hall's Bootstrap UCL	4.332	95% Percentile Bootstrap UCL	4.176
95% BCA Bootstrap UCL	4.167		
90% Chebyshev(Mean, Sd) UCL	4.605	95% Chebyshev(Mean, Sd) UCL	4.983
97.5% Chebyshev(Mean, Sd) UCL	5.508	99% Chebyshev(Mean, Sd) UCL	6.539

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.77	Mean	19.25
Maximum	39.4	Median	16.7
SD	10.99	Std. Error of Mean	4.486
Coefficient of Variation	0.571	Skewness	1.496
Mean of logged Data	2.839	SD of logged Data	0.518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.28	95% Adjusted-CLT UCL (Chen-1995)	29.55
		95% Modified-t UCL (Johnson-1978)	28.74

Nonparametric Distribution Free UCLs

95% CLT UCL	26.62	95% Jackknife UCL	28.28
95% Standard Bootstrap UCL	25.82	95% Bootstrap-t UCL	36.75
95% Hall's Bootstrap UCL	52.92	95% Percentile Bootstrap UCL	26.29
95% BCA Bootstrap UCL	28.52		
90% Chebyshev(Mean, Sd) UCL	32.7	95% Chebyshev(Mean, Sd) UCL	38.8
97.5% Chebyshev(Mean, Sd) UCL	47.26	99% Chebyshev(Mean, Sd) UCL	63.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.7	Mean	34.3
Maximum	54.5	Median	32.5
SD	14.72	Std. Error of Mean	6.008
Coefficient of Variation	0.429	Skewness	0.295
Mean of logged Data	3.455	SD of logged Data	0.444

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.41	95% Adjusted-CLT UCL (Chen-1995)	44.96
		95% Modified-t UCL (Johnson-1978)	46.53

Nonparametric Distribution Free UCLs

95% CLT UCL	44.18	95% Jackknife UCL	46.41
95% Standard Bootstrap UCL	43.18	95% Bootstrap-t UCL	48.14
95% Hall's Bootstrap UCL	40.75	95% Percentile Bootstrap UCL	43.9
95% BCA Bootstrap UCL	43.47		
90% Chebyshev(Mean, Sd) UCL	52.33	95% Chebyshev(Mean, Sd) UCL	60.49
97.5% Chebyshev(Mean, Sd) UCL	71.82	99% Chebyshev(Mean, Sd) UCL	94.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:10:41 PM
From File	21063C.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.65	Mean	13.8
Maximum	15.8	Median	14.25
SD	1.791	Std. Error of Mean	0.731
Coefficient of Variation	0.13	Skewness	-0.347
Mean of logged Data	2.617	SD of logged Data	0.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.27	95% Adjusted-CLT UCL (Chen-1995)	14.89
		95% Modified-t UCL (Johnson-1978)	15.26

Nonparametric Distribution Free UCLs

95% CLT UCL	15	95% Jackknife UCL	15.27
95% Standard Bootstrap UCL	14.91	95% Bootstrap-t UCL	15.32
95% Hall's Bootstrap UCL	14.65	95% Percentile Bootstrap UCL	14.89
95% BCA Bootstrap UCL	14.78		
90% Chebyshev(Mean, Sd) UCL	15.99	95% Chebyshev(Mean, Sd) UCL	16.99
97.5% Chebyshev(Mean, Sd) UCL	18.37	99% Chebyshev(Mean, Sd) UCL	21.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.7	Mean	24.2
Maximum	77.1	Median	13.7
SD	25.97	Std. Error of Mean	10.6
Coefficient of Variation	1.073	Skewness	2.425

Mean of logged Data	2.894	SD of logged Data	0.722

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.57	95% Adjusted-CLT UCL (Chen-1995)	52.86
		95% Modified-t UCL (Johnson-1978)	47.32

Nonparametric Distribution Free UCLs

95% CLT UCL	41.64	95% Jackknife UCL	45.57
95% Standard Bootstrap UCL	40.15	95% Bootstrap-t UCL	307
95% Hall's Bootstrap UCL	173.6	95% Percentile Bootstrap UCL	44.85
95% BCA Bootstrap UCL	55.42		
90% Chebyshev(Mean, Sd) UCL	56.01	95% Chebyshev(Mean, Sd) UCL	70.42
97.5% Chebyshev(Mean, Sd) UCL	90.42	99% Chebyshev(Mean, Sd) UCL	129.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	70.42

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	46.6	Mean	57.63
Maximum	72.1	Median	52.1
SD	11.36	Std. Error of Mean	4.638
Coefficient of Variation	0.197	Skewness	0.815
Mean of logged Data	4.039	SD of logged Data	0.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	66.98	95% Adjusted-CLT UCL (Chen-1995)	66.91
		95% Modified-t UCL (Johnson-1978)	67.24

Nonparametric Distribution Free UCLs

95% CLT UCL	65.26	95% Jackknife UCL	66.98
95% Standard Bootstrap UCL	64.7	95% Bootstrap-t UCL	90.68
95% Hall's Bootstrap UCL	166.6	95% Percentile Bootstrap UCL	65.07
95% BCA Bootstrap UCL	65.38		
90% Chebyshev(Mean, Sd) UCL	71.55	95% Chebyshev(Mean, Sd) UCL	77.85
97.5% Chebyshev(Mean, Sd) UCL	86.6	99% Chebyshev(Mean, Sd) UCL	103.8

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.701	Mean	0.936
Maximum	1	Median	0.979
SD	0.116	Std. Error of Mean	0.0472
Coefficient of Variation	0.123	Skewness	-2.39
Mean of logged Data	-0.0741	SD of logged Data	0.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.031	95% Adjusted-CLT UCL (Chen-1995)	0.964
		95% Modified-t UCL (Johnson-1978)	1.023

Nonparametric Distribution Free UCLs

95% CLT UCL	1.013	95% Jackknife UCL	1.031
95% Standard Bootstrap UCL	1.006	95% Bootstrap-t UCL	1.002
95% Hall's Bootstrap UCL	0.98	95% Percentile Bootstrap UCL	0.987
95% BCA Bootstrap UCL	0.984		
90% Chebyshev(Mean, Sd) UCL	1.077	95% Chebyshev(Mean, Sd) UCL	1.141
97.5% Chebyshev(Mean, Sd) UCL	1.23	99% Chebyshev(Mean, Sd) UCL	1.405

Suggested UCL to Use

95% Student's-t UCL	1.031	or 95% Modified-t UCL	1.023

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.52	Mean	0.671
Maximum	0.847	Median	0.688
SD	0.127	Std. Error of Mean	0.0518

Coefficient of Variation	0.189	Skewness	-0.0238
Mean of logged Data	-0.415	SD of logged Data	0.194

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.775	95% Adjusted-CLT UCL (Chen-1995)	0.755
		95% Modified-t UCL (Johnson-1978)	0.775

Nonparametric Distribution Free UCLs

95% CLT UCL	0.756	95% Jackknife UCL	0.775
95% Standard Bootstrap UCL	0.749	95% Bootstrap-t UCL	0.767
95% Hall's Bootstrap UCL	0.751	95% Percentile Bootstrap UCL	0.75
95% BCA Bootstrap UCL	0.746		
90% Chebyshev(Mean, Sd) UCL	0.826	95% Chebyshev(Mean, Sd) UCL	0.896
97.5% Chebyshev(Mean, Sd) UCL	0.994	99% Chebyshev(Mean, Sd) UCL	1.186

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.5	Mean	1.995
Maximum	2.3	Median	2.103
SD	0.29	Std. Error of Mean	0.119
Coefficient of Variation	0.146	Skewness	-1.135
Mean of logged Data	0.681	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.234	95% Adjusted-CLT UCL (Chen-1995)	2.131
		95% Modified-t UCL (Johnson-1978)	2.225

Nonparametric Distribution Free UCLs

95% CLT UCL	2.19	95% Jackknife UCL	2.234
95% Standard Bootstrap UCL	2.169	95% Bootstrap-t UCL	2.174
95% Hall's Bootstrap UCL	2.131	95% Percentile Bootstrap UCL	2.155

95% BCA Bootstrap UCL	2.14		
90% Chebyshev(Mean, Sd) UCL	2.351	95% Chebyshev(Mean, Sd) UCL	2.512
97.5% Chebyshev(Mean, Sd) UCL	2.735	99% Chebyshev(Mean, Sd) UCL	3.174

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.46	Mean	10.74
Maximum	17.1	Median	10.19
SD	4.509	Std. Error of Mean	1.841
Coefficient of Variation	0.42	Skewness	0.323
Mean of logged Data	2.296	SD of logged Data	0.439

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.44	95% Adjusted-CLT UCL (Chen-1995)	14.02
		95% Modified-t UCL (Johnson-1978)	14.48

Nonparametric Distribution Free UCLs

95% CLT UCL	13.76	95% Jackknife UCL	14.44
95% Standard Bootstrap UCL	13.48	95% Bootstrap-t UCL	14.76
95% Hall's Bootstrap UCL	13.84	95% Percentile Bootstrap UCL	13.5
95% BCA Bootstrap UCL	13.5		
90% Chebyshev(Mean, Sd) UCL	16.26	95% Chebyshev(Mean, Sd) UCL	18.76
97.5% Chebyshev(Mean, Sd) UCL	22.23	99% Chebyshev(Mean, Sd) UCL	29.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.2	Mean	15.23

Maximum	22.3	Median	14.7
SD	6.556	Std. Error of Mean	2.676
Coefficient of Variation	0.43	Skewness	0.0811
Mean of logged Data	2.64	SD of logged Data	0.455

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.62	95% Adjusted-CLT UCL (Chen-1995)	19.73
		95% Modified-t UCL (Johnson-1978)	20.64

Nonparametric Distribution Free UCLs

95% CLT UCL	19.63	95% Jackknife UCL	20.62
95% Standard Bootstrap UCL	19.22	95% Bootstrap-t UCL	20.25
95% Hall's Bootstrap UCL	17.89	95% Percentile Bootstrap UCL	19.47
95% BCA Bootstrap UCL	19.27		
90% Chebyshev(Mean, Sd) UCL	23.26	95% Chebyshev(Mean, Sd) UCL	26.9
97.5% Chebyshev(Mean, Sd) UCL	31.95	99% Chebyshev(Mean, Sd) UCL	41.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10	Mean	19.8
Maximum	31.4	Median	19.2
SD	8.994	Std. Error of Mean	3.672
Coefficient of Variation	0.454	Skewness	0.169
Mean of logged Data	2.892	SD of logged Data	0.481

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.2	95% Adjusted-CLT UCL (Chen-1995)	26.11
		95% Modified-t UCL (Johnson-1978)	27.24

Nonparametric Distribution Free UCLs

95% CLT UCL	25.84	95% Jackknife UCL	27.2
95% Standard Bootstrap UCL	25.38	95% Bootstrap-t UCL	28.03
95% Hall's Bootstrap UCL	23.65	95% Percentile Bootstrap UCL	25.25
95% BCA Bootstrap UCL	25.48		

90% Chebyshev(Mean, Sd) UCL	30.82	95% Chebyshev(Mean, Sd) UCL	35.81
97.5% Chebyshev(Mean, Sd) UCL	42.73	99% Chebyshev(Mean, Sd) UCL	56.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.93	Mean	10.41
Maximum	15.3	Median	9.965
SD	4.367	Std. Error of Mean	1.783
Coefficient of Variation	0.42	Skewness	0.0832
Mean of logged Data	2.264	SD of logged Data	0.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14	95% Adjusted-CLT UCL (Chen-1995)	13.41
		95% Modified-t UCL (Johnson-1978)	14.01

Nonparametric Distribution Free UCLs

95% CLT UCL	13.34	95% Jackknife UCL	14
95% Standard Bootstrap UCL	13.06	95% Bootstrap-t UCL	13.72
95% Hall's Bootstrap UCL	12.01	95% Percentile Bootstrap UCL	13.14
95% BCA Bootstrap UCL	13.15		
90% Chebyshev(Mean, Sd) UCL	15.76	95% Chebyshev(Mean, Sd) UCL	18.18
97.5% Chebyshev(Mean, Sd) UCL	21.54	99% Chebyshev(Mean, Sd) UCL	28.15

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.13	Mean	7.617
Maximum	12.8	Median	6.535
SD	3.655	Std. Error of Mean	1.492
Coefficient of Variation	0.48	Skewness	0.556
Mean of logged Data	1.934	SD of logged Data	0.482

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.62	95% Adjusted-CLT UCL (Chen-1995)	10.43
		95% Modified-t UCL (Johnson-1978)	10.68

Nonparametric Distribution Free UCLs

95% CLT UCL	10.07	95% Jackknife UCL	10.62
95% Standard Bootstrap UCL	9.826	95% Bootstrap-t UCL	13.49
95% Hall's Bootstrap UCL	10.23	95% Percentile Bootstrap UCL	9.83
95% BCA Bootstrap UCL	10.16		
90% Chebyshev(Mean, Sd) UCL	12.09	95% Chebyshev(Mean, Sd) UCL	14.12
97.5% Chebyshev(Mean, Sd) UCL	16.94	99% Chebyshev(Mean, Sd) UCL	22.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.88	Mean	15.16
Maximum	24.6	Median	14.4
SD	6.713	Std. Error of Mean	2.741
Coefficient of Variation	0.443	Skewness	0.34
Mean of logged Data	2.633	SD of logged Data	0.46

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.68	95% Adjusted-CLT UCL (Chen-1995)	20.08
		95% Modified-t UCL (Johnson-1978)	20.75

Nonparametric Distribution Free UCLs

95% CLT UCL	19.67	95% Jackknife UCL	20.68
95% Standard Bootstrap UCL	19.18	95% Bootstrap-t UCL	22.55
95% Hall's Bootstrap UCL	18.55	95% Percentile Bootstrap UCL	19.5
95% BCA Bootstrap UCL	19.61		
90% Chebyshev(Mean, Sd) UCL	23.38	95% Chebyshev(Mean, Sd) UCL	27.11
97.5% Chebyshev(Mean, Sd) UCL	32.28	99% Chebyshev(Mean, Sd) UCL	42.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.22	Mean	3.729
Maximum	5.2	Median	3.288
SD	0.803	Std. Error of Mean	0.328
Coefficient of Variation	0.215	Skewness	1.639
Mean of logged Data	1.299	SD of logged Data	0.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.39	95% Adjusted-CLT UCL (Chen-1995)	4.503
		95% Modified-t UCL (Johnson-1978)	4.426

Nonparametric Distribution Free UCLs

95% CLT UCL	4.268	95% Jackknife UCL	4.39
95% Standard Bootstrap UCL	4.216	95% Bootstrap-t UCL	13.67
95% Hall's Bootstrap UCL	10.98	95% Percentile Bootstrap UCL	4.238
95% BCA Bootstrap UCL	4.386		
90% Chebyshev(Mean, Sd) UCL	4.712	95% Chebyshev(Mean, Sd) UCL	5.158
97.5% Chebyshev(Mean, Sd) UCL	5.776	99% Chebyshev(Mean, Sd) UCL	6.99

Suggested UCL to Use

95% Student's-t UCL	4.39	or 95% Modified-t UCL	4.426

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.12	Mean	16.75
Maximum	29.3	Median	14.9
SD	8.24	Std. Error of Mean	3.364
Coefficient of Variation	0.492	Skewness	0.551
Mean of logged Data	2.712	SD of logged Data	0.517

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.53	95% Adjusted-CLT UCL (Chen-1995)	23.1
		95% Modified-t UCL (Johnson-1978)	23.66

Nonparametric Distribution Free UCLs

95% CLT UCL	22.29	95% Jackknife UCL	23.53
95% Standard Bootstrap UCL	21.78	95% Bootstrap-t UCL	24.73
95% Hall's Bootstrap UCL	25.09	95% Percentile Bootstrap UCL	21.55
95% BCA Bootstrap UCL	21.93		
90% Chebyshev(Mean, Sd) UCL	26.85	95% Chebyshev(Mean, Sd) UCL	31.42
97.5% Chebyshev(Mean, Sd) UCL	37.76	99% Chebyshev(Mean, Sd) UCL	50.22

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.255	Mean	1.303
Maximum	1.325	Median	1.313
SD	0.0279	Std. Error of Mean	0.0114
Coefficient of Variation	0.0214	Skewness	-1.168
Mean of logged Data	0.264	SD of logged Data	0.0216

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.325	95% Adjusted-CLT UCL (Chen-1995)	1.315
		95% Modified-t UCL (Johnson-1978)	1.325

Nonparametric Distribution Free UCLs

95% CLT UCL	1.321	95% Jackknife UCL	1.325
95% Standard Bootstrap UCL	1.319	95% Bootstrap-t UCL	1.319
95% Hall's Bootstrap UCL	1.316	95% Percentile Bootstrap UCL	1.319
95% BCA Bootstrap UCL	1.315		
90% Chebyshev(Mean, Sd) UCL	1.337	95% Chebyshev(Mean, Sd) UCL	1.352
97.5% Chebyshev(Mean, Sd) UCL	1.374	99% Chebyshev(Mean, Sd) UCL	1.416

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.71	Mean	12.39
Maximum	18.4	Median	11.81
SD	5.35	Std. Error of Mean	2.184
Coefficient of Variation	0.432	Skewness	0.095
Mean of logged Data	2.433	SD of logged Data	0.455

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.79	95% Adjusted-CLT UCL (Chen-1995)	16.07
		95% Modified-t UCL (Johnson-1978)	16.8

Nonparametric Distribution Free UCLs

95% CLT UCL	15.98	95% Jackknife UCL	16.79
95% Standard Bootstrap UCL	15.7	95% Bootstrap-t UCL	16.76
95% Hall's Bootstrap UCL	14.51	95% Percentile Bootstrap UCL	15.6
95% BCA Bootstrap UCL	15.6		
90% Chebyshev(Mean, Sd) UCL	18.94	95% Chebyshev(Mean, Sd) UCL	21.91
97.5% Chebyshev(Mean, Sd) UCL	26.03	99% Chebyshev(Mean, Sd) UCL	34.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.945	Mean	1.571
Maximum	2.29	Median	1.655
SD	0.534	Std. Error of Mean	0.218
Coefficient of Variation	0.34	Skewness	-0.0394
Mean of logged Data	0.399	SD of logged Data	0.363

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.01	95% Adjusted-CLT UCL (Chen-1995)	1.925
		95% Modified-t UCL (Johnson-1978)	2.009

Nonparametric Distribution Free UCLs

95% CLT UCL	1.929	95% Jackknife UCL	2.01
95% Standard Bootstrap UCL	1.898	95% Bootstrap-t UCL	1.989
95% Hall's Bootstrap UCL	1.859	95% Percentile Bootstrap UCL	1.878
95% BCA Bootstrap UCL	1.877		
90% Chebyshev(Mean, Sd) UCL	2.224	95% Chebyshev(Mean, Sd) UCL	2.52
97.5% Chebyshev(Mean, Sd) UCL	2.931	99% Chebyshev(Mean, Sd) UCL	3.738

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.76	Mean	6.237
Maximum	9.55	Median	5.84
SD	2.635	Std. Error of Mean	1.076
Coefficient of Variation	0.422	Skewness	0.0855
Mean of logged Data	1.746	SD of logged Data	0.466

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.404	95% Adjusted-CLT UCL (Chen-1995)	8.046
		95% Modified-t UCL (Johnson-1978)	8.41

Nonparametric Distribution Free UCLs

95% CLT UCL	8.006	95% Jackknife UCL	8.404
95% Standard Bootstrap UCL	7.894	95% Bootstrap-t UCL	8.664
95% Hall's Bootstrap UCL	8.399	95% Percentile Bootstrap UCL	7.897
95% BCA Bootstrap UCL	7.875		
90% Chebyshev(Mean, Sd) UCL	9.464	95% Chebyshev(Mean, Sd) UCL	10.93
97.5% Chebyshev(Mean, Sd) UCL	12.95	99% Chebyshev(Mean, Sd) UCL	16.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.15	Mean	15.63
Maximum	25.4	Median	14.35
SD	7.061	Std. Error of Mean	2.883
Coefficient of Variation	0.452	Skewness	0.33
Mean of logged Data	2.657	SD of logged Data	0.48

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.43	95% Adjusted-CLT UCL (Chen-1995)	20.78
		95% Modified-t UCL (Johnson-1978)	21.5

Nonparametric Distribution Free UCLs

95% CLT UCL	20.37	95% Jackknife UCL	21.43
95% Standard Bootstrap UCL	19.99	95% Bootstrap-t UCL	21.75
95% Hall's Bootstrap UCL	21.76	95% Percentile Bootstrap UCL	20.37
95% BCA Bootstrap UCL	19.79		
90% Chebyshev(Mean, Sd) UCL	24.27	95% Chebyshev(Mean, Sd) UCL	28.19
97.5% Chebyshev(Mean, Sd) UCL	33.63	99% Chebyshev(Mean, Sd) UCL	44.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:13:31 PM
From File	21063D.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.5	Mean	13.38
Maximum	14.4	Median	13.4
SD	0.714	Std. Error of Mean	0.291
Coefficient of Variation	0.0533	Skewness	0.149
Mean of logged Data	2.593	SD of logged Data	0.0533

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.97	95% Adjusted-CLT UCL (Chen-1995)	13.88
		95% Modified-t UCL (Johnson-1978)	13.97

Nonparametric Distribution Free UCLs

95% CLT UCL	13.86	95% Jackknife UCL	13.97
95% Standard Bootstrap UCL	13.82	95% Bootstrap-t UCL	14
95% Hall's Bootstrap UCL	13.95	95% Percentile Bootstrap UCL	13.82
95% BCA Bootstrap UCL	13.78		
90% Chebyshev(Mean, Sd) UCL	14.26	95% Chebyshev(Mean, Sd) UCL	14.65
97.5% Chebyshev(Mean, Sd) UCL	15.2	99% Chebyshev(Mean, Sd) UCL	16.28

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.9	Mean	13.2
Maximum	15.7	Median	12.95
SD	2.298	Std. Error of Mean	0.938
Coefficient of Variation	0.174	Skewness	0.0868
Mean of logged Data	2.568	SD of logged Data	0.175

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.09	95% Adjusted-CLT UCL (Chen-1995)	14.78
		95% Modified-t UCL (Johnson-1978)	15.1

Nonparametric Distribution Free UCLs

95% CLT UCL	14.74	95% Jackknife UCL	15.09
95% Standard Bootstrap UCL	14.6	95% Bootstrap-t UCL	14.98
95% Hall's Bootstrap UCL	14.03	95% Percentile Bootstrap UCL	14.62
95% BCA Bootstrap UCL	14.6		
90% Chebyshev(Mean, Sd) UCL	16.01	95% Chebyshev(Mean, Sd) UCL	17.29
97.5% Chebyshev(Mean, Sd) UCL	19.06	99% Chebyshev(Mean, Sd) UCL	22.53

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.3	Mean	46.02
Maximum	47.7	Median	45.95
SD	1.107	Std. Error of Mean	0.452
Coefficient of Variation	0.0241	Skewness	-0.0463
Mean of logged Data	3.829	SD of logged Data	0.0241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.93	95% Adjusted-CLT UCL (Chen-1995)	46.75
		95% Modified-t UCL (Johnson-1978)	46.93

Nonparametric Distribution Free UCLs

95% CLT UCL	46.76	95% Jackknife UCL	46.93
95% Standard Bootstrap UCL	46.7	95% Bootstrap-t UCL	46.94
95% Hall's Bootstrap UCL	47.16	95% Percentile Bootstrap UCL	46.7
95% BCA Bootstrap UCL	46.68		
90% Chebyshev(Mean, Sd) UCL	47.37	95% Chebyshev(Mean, Sd) UCL	47.99
97.5% Chebyshev(Mean, Sd) UCL	48.84	99% Chebyshev(Mean, Sd) UCL	50.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.823	Mean	1.46
Maximum	3.64	Median	1.072
SD	1.079	Std. Error of Mean	0.44
Coefficient of Variation	0.739	Skewness	2.341
Mean of logged Data	0.225	SD of logged Data	0.543

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.347	95% Adjusted-CLT UCL (Chen-1995)	2.634
		95% Modified-t UCL (Johnson-1978)	2.417

Nonparametric Distribution Free UCLs

95% CLT UCL	2.184	95% Jackknife UCL	2.347
95% Standard Bootstrap UCL	2.121	95% Bootstrap-t UCL	5.675
95% Hall's Bootstrap UCL	5.892	95% Percentile Bootstrap UCL	2.291
95% BCA Bootstrap UCL	2.375		
90% Chebyshev(Mean, Sd) UCL	2.781	95% Chebyshev(Mean, Sd) UCL	3.38
97.5% Chebyshev(Mean, Sd) UCL	4.21	99% Chebyshev(Mean, Sd) UCL	5.842

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.38

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.52	Mean	2.924
Maximum	4.93	Median	3.34
SD	2.177	Std. Error of Mean	0.889
Coefficient of Variation	0.744	Skewness	-0.204
Mean of logged Data	0.684	SD of logged Data	1.092

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.715	95% Adjusted-CLT UCL (Chen-1995)	4.307
		95% Modified-t UCL (Johnson-1978)	4.702

Nonparametric Distribution Free UCLs

95% CLT UCL	4.386	95% Jackknife UCL	4.715
95% Standard Bootstrap UCL	4.274	95% Bootstrap-t UCL	4.678
95% Hall's Bootstrap UCL	3.792	95% Percentile Bootstrap UCL	4.176
95% BCA Bootstrap UCL	4.158		
90% Chebyshev(Mean, Sd) UCL	5.59	95% Chebyshev(Mean, Sd) UCL	6.798
97.5% Chebyshev(Mean, Sd) UCL	8.474	99% Chebyshev(Mean, Sd) UCL	11.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.47	Mean	4.052
Maximum	7.9	Median	4.15
SD	2.319	Std. Error of Mean	0.947
Coefficient of Variation	0.572	Skewness	0.71
Mean of logged Data	1.247	SD of logged Data	0.629

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.959	95% Adjusted-CLT UCL (Chen-1995)	5.902
		95% Modified-t UCL (Johnson-1978)	6.005

Nonparametric Distribution Free UCLs

95% CLT UCL	5.609	95% Jackknife UCL	5.959
95% Standard Bootstrap UCL	5.463	95% Bootstrap-t UCL	6.306
95% Hall's Bootstrap UCL	6.406	95% Percentile Bootstrap UCL	5.613
95% BCA Bootstrap UCL	5.648		
90% Chebyshev(Mean, Sd) UCL	6.892	95% Chebyshev(Mean, Sd) UCL	8.178
97.5% Chebyshev(Mean, Sd) UCL	9.964	99% Chebyshev(Mean, Sd) UCL	13.47

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.51	Mean	26.42
Maximum	41.8	Median	26.4
SD	12.89	Std. Error of Mean	5.263
Coefficient of Variation	0.488	Skewness	-0.0695
Mean of logged Data	3.151	SD of logged Data	0.576

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.02	95% Adjusted-CLT UCL (Chen-1995)	34.92
		95% Modified-t UCL (Johnson-1978)	37

Nonparametric Distribution Free UCLs

95% CLT UCL	35.08	95% Jackknife UCL	37.02
95% Standard Bootstrap UCL	34.36	95% Bootstrap-t UCL	37.09
95% Hall's Bootstrap UCL	36.02	95% Percentile Bootstrap UCL	34.33
95% BCA Bootstrap UCL	34.4		
90% Chebyshev(Mean, Sd) UCL	42.21	95% Chebyshev(Mean, Sd) UCL	49.36
97.5% Chebyshev(Mean, Sd) UCL	59.29	99% Chebyshev(Mean, Sd) UCL	78.79

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.3	Mean	37.87
Maximum	63.2	Median	33.8
SD	19.33	Std. Error of Mean	7.89
Coefficient of Variation	0.51	Skewness	0.397
Mean of logged Data	3.515	SD of logged Data	0.549

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.76	95% Adjusted-CLT UCL (Chen-1995)	52.21
		95% Modified-t UCL (Johnson-1978)	53.98

Nonparametric Distribution Free UCLs

95% CLT UCL	50.84	95% Jackknife UCL	53.76
95% Standard Bootstrap UCL	49.77	95% Bootstrap-t UCL	62.17
95% Hall's Bootstrap UCL	64.32	95% Percentile Bootstrap UCL	49.38
95% BCA Bootstrap UCL	50.12		
90% Chebyshev(Mean, Sd) UCL	61.54	95% Chebyshev(Mean, Sd) UCL	72.26
97.5% Chebyshev(Mean, Sd) UCL	87.14	99% Chebyshev(Mean, Sd) UCL	116.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.2	Mean	47.25
Maximum	77.1	Median	45.45
SD	25.66	Std. Error of Mean	10.47
Coefficient of Variation	0.543	Skewness	0.0725
Mean of logged Data	3.707	SD of logged Data	0.628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	68.36	95% Adjusted-CLT UCL (Chen-1995)	64.81
		95% Modified-t UCL (Johnson-1978)	68.41

Nonparametric Distribution Free UCLs

95% CLT UCL	64.48	95% Jackknife UCL	68.36
95% Standard Bootstrap UCL	63.02	95% Bootstrap-t UCL	67.65
95% Hall's Bootstrap UCL	62.35	95% Percentile Bootstrap UCL	62.93
95% BCA Bootstrap UCL	62.43		
90% Chebyshev(Mean, Sd) UCL	78.67	95% Chebyshev(Mean, Sd) UCL	92.91
97.5% Chebyshev(Mean, Sd) UCL	112.7	99% Chebyshev(Mean, Sd) UCL	151.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.95	Mean	26.16
Maximum	42.7	Median	24.65
SD	14.07	Std. Error of Mean	5.743
Coefficient of Variation	0.538	Skewness	0.138
Mean of logged Data	3.124	SD of logged Data	0.601

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.73	95% Adjusted-CLT UCL (Chen-1995)	35.95
		95% Modified-t UCL (Johnson-1978)	37.78

Nonparametric Distribution Free UCLs

95% CLT UCL	35.6	95% Jackknife UCL	37.73
95% Standard Bootstrap UCL	34.99	95% Bootstrap-t UCL	41.68
95% Hall's Bootstrap UCL	34.28	95% Percentile Bootstrap UCL	34.85
95% BCA Bootstrap UCL	34.48		
90% Chebyshev(Mean, Sd) UCL	43.39	95% Chebyshev(Mean, Sd) UCL	51.19
97.5% Chebyshev(Mean, Sd) UCL	62.02	99% Chebyshev(Mean, Sd) UCL	83.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.87	Mean	18.46
Maximum	30	Median	17.5
SD	9.266	Std. Error of Mean	3.783
Coefficient of Variation	0.502	Skewness	0.202
Mean of logged Data	2.797	SD of logged Data	0.549

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.09	95% Adjusted-CLT UCL (Chen-1995)	25.02
		95% Modified-t UCL (Johnson-1978)	26.14

Nonparametric Distribution Free UCLs

95% CLT UCL	24.69	95% Jackknife UCL	26.09
95% Standard Bootstrap UCL	24.24	95% Bootstrap-t UCL	27.05
95% Hall's Bootstrap UCL	25.71	95% Percentile Bootstrap UCL	24.4
95% BCA Bootstrap UCL	24.07		
90% Chebyshev(Mean, Sd) UCL	29.81	95% Chebyshev(Mean, Sd) UCL	34.95
97.5% Chebyshev(Mean, Sd) UCL	42.09	99% Chebyshev(Mean, Sd) UCL	56.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.5	Mean	33.4
Maximum	50.2	Median	36.85
SD	16.66	Std. Error of Mean	6.802
Coefficient of Variation	0.499	Skewness	-0.341
Mean of logged Data	3.373	SD of logged Data	0.609

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.11	95% Adjusted-CLT UCL (Chen-1995)	43.58
		95% Modified-t UCL (Johnson-1978)	46.95

Nonparametric Distribution Free UCLs

95% CLT UCL	44.59	95% Jackknife UCL	47.11
95% Standard Bootstrap UCL	43.58	95% Bootstrap-t UCL	46.41
95% Hall's Bootstrap UCL	40.75	95% Percentile Bootstrap UCL	43.55
95% BCA Bootstrap UCL	42.8		
90% Chebyshev(Mean, Sd) UCL	53.81	95% Chebyshev(Mean, Sd) UCL	63.05
97.5% Chebyshev(Mean, Sd) UCL	75.88	99% Chebyshev(Mean, Sd) UCL	101.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.22	Mean	7.448
Maximum	12.15	Median	7.42
SD	4.085	Std. Error of Mean	1.668
Coefficient of Variation	0.548	Skewness	0.0447
Mean of logged Data	1.863	SD of logged Data	0.608

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.81	95% Adjusted-CLT UCL (Chen-1995)	10.22
		95% Modified-t UCL (Johnson-1978)	10.81

Nonparametric Distribution Free UCLs

95% CLT UCL	10.19	95% Jackknife UCL	10.81
95% Standard Bootstrap UCL	9.974	95% Bootstrap-t UCL	11.08
95% Hall's Bootstrap UCL	8.952	95% Percentile Bootstrap UCL	10.04
95% BCA Bootstrap UCL	10.05		
90% Chebyshev(Mean, Sd) UCL	12.45	95% Chebyshev(Mean, Sd) UCL	14.72
97.5% Chebyshev(Mean, Sd) UCL	17.86	99% Chebyshev(Mean, Sd) UCL	24.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.8	Mean	45.9
Maximum	67	Median	55.2
SD	21.71	Std. Error of Mean	8.862
Coefficient of Variation	0.473	Skewness	-0.837
Mean of logged Data	3.69	SD of logged Data	0.627

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.76	95% Adjusted-CLT UCL (Chen-1995)	57.24
		95% Modified-t UCL (Johnson-1978)	63.25

Nonparametric Distribution Free UCLs

95% CLT UCL	60.48	95% Jackknife UCL	63.76
95% Standard Bootstrap UCL	59.41	95% Bootstrap-t UCL	60.3
95% Hall's Bootstrap UCL	54.97	95% Percentile Bootstrap UCL	59.45
95% BCA Bootstrap UCL	57.72		
90% Chebyshev(Mean, Sd) UCL	72.49	95% Chebyshev(Mean, Sd) UCL	84.53
97.5% Chebyshev(Mean, Sd) UCL	101.2	99% Chebyshev(Mean, Sd) UCL	134.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.904	Mean	1.832
Maximum	4.855	Median	1.308
SD	1.49	Std. Error of Mean	0.608
Coefficient of Variation	0.814	Skewness	2.382
Mean of logged Data	0.425	SD of logged Data	0.585

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.057	95% Adjusted-CLT UCL (Chen-1995)	3.464
		95% Modified-t UCL (Johnson-1978)	3.156

Nonparametric Distribution Free UCLs

95% CLT UCL	2.832	95% Jackknife UCL	3.057
95% Standard Bootstrap UCL	2.72	95% Bootstrap-t UCL	136.3
95% Hall's Bootstrap UCL	48.33	95% Percentile Bootstrap UCL	3.014
95% BCA Bootstrap UCL	3.083		
90% Chebyshev(Mean, Sd) UCL	3.656	95% Chebyshev(Mean, Sd) UCL	4.483
97.5% Chebyshev(Mean, Sd) UCL	5.63	99% Chebyshev(Mean, Sd) UCL	7.884

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.483

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.5	Mean	28.23
Maximum	47.5	Median	25.4
SD	15.68	Std. Error of Mean	6.4
Coefficient of Variation	0.555	Skewness	0.32
Mean of logged Data	3.195	SD of logged Data	0.61

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.13	95% Adjusted-CLT UCL (Chen-1995)	39.65
		95% Modified-t UCL (Johnson-1978)	41.27

Nonparametric Distribution Free UCLs

95% CLT UCL	38.76	95% Jackknife UCL	41.13
95% Standard Bootstrap UCL	37.83	95% Bootstrap-t UCL	44.66
95% Hall's Bootstrap UCL	43	95% Percentile Bootstrap UCL	38.13
95% BCA Bootstrap UCL	38.57		
90% Chebyshev(Mean, Sd) UCL	47.43	95% Chebyshev(Mean, Sd) UCL	56.13
97.5% Chebyshev(Mean, Sd) UCL	68.2	99% Chebyshev(Mean, Sd) UCL	91.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.97	Mean	2.563
Maximum	3.64	Median	2.495
SD	0.569	Std. Error of Mean	0.232
Coefficient of Variation	0.222	Skewness	1.637
Mean of logged Data	0.923	SD of logged Data	0.204

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.032	95% Adjusted-CLT UCL (Chen-1995)	3.112
		95% Modified-t UCL (Johnson-1978)	3.058

Nonparametric Distribution Free UCLs

95% CLT UCL	2.946	95% Jackknife UCL	3.032
95% Standard Bootstrap UCL	2.912	95% Bootstrap-t UCL	3.368
95% Hall's Bootstrap UCL	4.884	95% Percentile Bootstrap UCL	2.98
95% BCA Bootstrap UCL	3.037		
90% Chebyshev(Mean, Sd) UCL	3.261	95% Chebyshev(Mean, Sd) UCL	3.577
97.5% Chebyshev(Mean, Sd) UCL	4.015	99% Chebyshev(Mean, Sd) UCL	4.876

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.875	Mean	18.4
Maximum	32.6	Median	21.55
SD	11.21	Std. Error of Mean	4.577
Coefficient of Variation	0.609	Skewness	-0.367
Mean of logged Data	2.669	SD of logged Data	0.851

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.62	95% Adjusted-CLT UCL (Chen-1995)	25.19
		95% Modified-t UCL (Johnson-1978)	27.51

Nonparametric Distribution Free UCLs

95% CLT UCL	25.93	95% Jackknife UCL	27.62
95% Standard Bootstrap UCL	25.3	95% Bootstrap-t UCL	27.12
95% Hall's Bootstrap UCL	24.2	95% Percentile Bootstrap UCL	25.08
95% BCA Bootstrap UCL	24.86		
90% Chebyshev(Mean, Sd) UCL	32.13	95% Chebyshev(Mean, Sd) UCL	38.35
97.5% Chebyshev(Mean, Sd) UCL	46.98	99% Chebyshev(Mean, Sd) UCL	63.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.6	Mean	45.92
Maximum	68.3	Median	54.1
SD	21.89	Std. Error of Mean	8.937
Coefficient of Variation	0.477	Skewness	-0.769
Mean of logged Data	3.689	SD of logged Data	0.63

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.93	95% Adjusted-CLT UCL (Chen-1995)	57.62
		95% Modified-t UCL (Johnson-1978)	63.46

Nonparametric Distribution Free UCLs

95% CLT UCL	60.62	95% Jackknife UCL	63.93
95% Standard Bootstrap UCL	59.2	95% Bootstrap-t UCL	60.81
95% Hall's Bootstrap UCL	55.43	95% Percentile Bootstrap UCL	59.02
95% BCA Bootstrap UCL	57.9		
90% Chebyshev(Mean, Sd) UCL	72.73	95% Chebyshev(Mean, Sd) UCL	84.87
97.5% Chebyshev(Mean, Sd) UCL	101.7	99% Chebyshev(Mean, Sd) UCL	134.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:15:57 PM
From File	21063E.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	11.5	Mean	14
Maximum	14.7	Median	14.4
SD	1.238	Std. Error of Mean	0.505
Coefficient of Variation	0.0884	Skewness	-2.335
Mean of logged Data	2.635	SD of logged Data	0.0954

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.02	95% Adjusted-CLT UCL (Chen-1995)	14.32
		95% Modified-t UCL (Johnson-1978)	14.94

Nonparametric Distribution Free UCLs

95% CLT UCL	14.83	95% Jackknife UCL	15.02
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.52	95% Chebyshev(Mean, Sd) UCL	16.2
97.5% Chebyshev(Mean, Sd) UCL	17.16	99% Chebyshev(Mean, Sd) UCL	19.03

Suggested UCL to Use

95% Student's-t UCL	15.02	or 95% Modified-t UCL	14.94

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12	Mean	15.02
Maximum	18.1	Median	15.6

SD	2.478	Std. Error of Mean	1.012
Coefficient of Variation	0.165	Skewness	-0.348
Mean of logged Data	2.697	SD of logged Data	0.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.06	95% Adjusted-CLT UCL (Chen-1995)	16.53
		95% Modified-t UCL (Johnson-1978)	17.03

Nonparametric Distribution Free UCLs

95% CLT UCL	16.68	95% Jackknife UCL	17.06
95% Standard Bootstrap UCL	16.53	95% Bootstrap-t UCL	16.81
95% Hall's Bootstrap UCL	16.27	95% Percentile Bootstrap UCL	16.52
95% BCA Bootstrap UCL	16.42		
90% Chebyshev(Mean, Sd) UCL	18.05	95% Chebyshev(Mean, Sd) UCL	19.43
97.5% Chebyshev(Mean, Sd) UCL	21.33	99% Chebyshev(Mean, Sd) UCL	25.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	46.8	Mean	50.67
Maximum	62.2	Median	49.05
SD	5.749	Std. Error of Mean	2.347
Coefficient of Variation	0.113	Skewness	2.259
Mean of logged Data	3.92	SD of logged Data	0.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.4	95% Adjusted-CLT UCL (Chen-1995)	56.84
		95% Modified-t UCL (Johnson-1978)	55.76

Nonparametric Distribution Free UCLs

95% CLT UCL	54.53	95% Jackknife UCL	55.4
95% Standard Bootstrap UCL	54.14	95% Bootstrap-t UCL	66.72

95% Hall's Bootstrap UCL	75.89	95% Percentile Bootstrap UCL	54.95
95% BCA Bootstrap UCL	55.7		
90% Chebyshev(Mean, Sd) UCL	57.71	95% Chebyshev(Mean, Sd) UCL	60.9
97.5% Chebyshev(Mean, Sd) UCL	65.32	99% Chebyshev(Mean, Sd) UCL	74.02

Suggested UCL to Use

95% Student's-t UCL	55.4	or 95% Modified-t UCL	55.76

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.624	Mean	1.032
Maximum	1.51	Median	1.003
SD	0.296	Std. Error of Mean	0.121
Coefficient of Variation	0.287	Skewness	0.467
Mean of logged Data	-0.00329	SD of logged Data	0.294

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.276	95% Adjusted-CLT UCL (Chen-1995)	1.256
		95% Modified-t UCL (Johnson-1978)	1.279

Nonparametric Distribution Free UCLs

95% CLT UCL	1.231	95% Jackknife UCL	1.276
95% Standard Bootstrap UCL	1.214	95% Bootstrap-t UCL	1.323
95% Hall's Bootstrap UCL	1.506	95% Percentile Bootstrap UCL	1.222
95% BCA Bootstrap UCL	1.23		
90% Chebyshev(Mean, Sd) UCL	1.395	95% Chebyshev(Mean, Sd) UCL	1.559
97.5% Chebyshev(Mean, Sd) UCL	1.786	99% Chebyshev(Mean, Sd) UCL	2.234

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.52	Mean	0.738
Maximum	1.46	Median	0.603
SD	0.364	Std. Error of Mean	0.149

Coefficient of Variation	0.493	Skewness	2.159
Mean of logged Data	-0.379	SD of logged Data	0.397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.038	95% Adjusted-CLT UCL (Chen-1995)	1.122
		95% Modified-t UCL (Johnson-1978)	1.059

Nonparametric Distribution Free UCLs

95% CLT UCL	0.983	95% Jackknife UCL	1.038
95% Standard Bootstrap UCL	0.962	95% Bootstrap-t UCL	1.57
95% Hall's Bootstrap UCL	1.95	95% Percentile Bootstrap UCL	0.994
95% BCA Bootstrap UCL	1.058		
90% Chebyshev(Mean, Sd) UCL	1.184	95% Chebyshev(Mean, Sd) UCL	1.386
97.5% Chebyshev(Mean, Sd) UCL	1.666	99% Chebyshev(Mean, Sd) UCL	2.216

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.8	Mean	2.178
Maximum	2.95	Median	2.125
SD	0.404	Std. Error of Mean	0.165
Coefficient of Variation	0.186	Skewness	1.76
Mean of logged Data	0.765	SD of logged Data	0.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.51	95% Adjusted-CLT UCL (Chen-1995)	2.576
		95% Modified-t UCL (Johnson-1978)	2.53

Nonparametric Distribution Free UCLs

95% CLT UCL	2.449	95% Jackknife UCL	2.51
95% Standard Bootstrap UCL	2.422	95% Bootstrap-t UCL	2.804
95% Hall's Bootstrap UCL	3.686	95% Percentile Bootstrap UCL	2.427
95% BCA Bootstrap UCL	2.509		
90% Chebyshev(Mean, Sd) UCL	2.673	95% Chebyshev(Mean, Sd) UCL	2.897
97.5% Chebyshev(Mean, Sd) UCL	3.208	99% Chebyshev(Mean, Sd) UCL	3.82

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.41	Mean	14.47
Maximum	29.1	Median	12.74
SD	9.682	Std. Error of Mean	3.953
Coefficient of Variation	0.669	Skewness	0.547
Mean of logged Data	2.459	SD of logged Data	0.74

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.43	95% Adjusted-CLT UCL (Chen-1995)	21.91
		95% Modified-t UCL (Johnson-1978)	22.58

Nonparametric Distribution Free UCLs

95% CLT UCL	20.97	95% Jackknife UCL	22.43
95% Standard Bootstrap UCL	20.43	95% Bootstrap-t UCL	26.27
95% Hall's Bootstrap UCL	19.55	95% Percentile Bootstrap UCL	20.42
95% BCA Bootstrap UCL	21.23		
90% Chebyshev(Mean, Sd) UCL	26.33	95% Chebyshev(Mean, Sd) UCL	31.7
97.5% Chebyshev(Mean, Sd) UCL	39.15	99% Chebyshev(Mean, Sd) UCL	53.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.03	Mean	22.19
Maximum	42.6	Median	19.7
SD	13.62	Std. Error of Mean	5.56
Coefficient of Variation	0.614	Skewness	0.465
Mean of logged Data	2.911	SD of logged Data	0.712

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.39	95% Adjusted-CLT UCL (Chen-1995)	32.46
		95% Modified-t UCL (Johnson-1978)	33.57

Nonparametric Distribution Free UCLs

95% CLT UCL	31.33	95% Jackknife UCL	33.39
95% Standard Bootstrap UCL	30.69	95% Bootstrap-t UCL	34.98
95% Hall's Bootstrap UCL	33.28	95% Percentile Bootstrap UCL	31.18
95% BCA Bootstrap UCL	31.64		
90% Chebyshev(Mean, Sd) UCL	38.87	95% Chebyshev(Mean, Sd) UCL	46.42
97.5% Chebyshev(Mean, Sd) UCL	56.91	99% Chebyshev(Mean, Sd) UCL	77.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.25	Mean	26.98
Maximum	53	Median	24.4
SD	18.05	Std. Error of Mean	7.37
Coefficient of Variation	0.669	Skewness	0.411
Mean of logged Data	3.076	SD of logged Data	0.752

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.83	95% Adjusted-CLT UCL (Chen-1995)	40.42
		95% Modified-t UCL (Johnson-1978)	42.03

Nonparametric Distribution Free UCLs

95% CLT UCL	39.1	95% Jackknife UCL	41.83
95% Standard Bootstrap UCL	38.11	95% Bootstrap-t UCL	44.92
95% Hall's Bootstrap UCL	35.48	95% Percentile Bootstrap UCL	38.59
95% BCA Bootstrap UCL	39.52		
90% Chebyshev(Mean, Sd) UCL	49.09	95% Chebyshev(Mean, Sd) UCL	59.1
97.5% Chebyshev(Mean, Sd) UCL	73	99% Chebyshev(Mean, Sd) UCL	100.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.28	Mean	14.99
Maximum	28.1	Median	13.58
SD	9.71	Std. Error of Mean	3.964
Coefficient of Variation	0.648	Skewness	0.267
Mean of logged Data	2.495	SD of logged Data	0.75

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.98	95% Adjusted-CLT UCL (Chen-1995)	21.97
		95% Modified-t UCL (Johnson-1978)	23.05

Nonparametric Distribution Free UCLs

95% CLT UCL	21.51	95% Jackknife UCL	22.98
95% Standard Bootstrap UCL	20.92	95% Bootstrap-t UCL	25.89
95% Hall's Bootstrap UCL	19.54	95% Percentile Bootstrap UCL	21.2
95% BCA Bootstrap UCL	21.49		
90% Chebyshev(Mean, Sd) UCL	26.88	95% Chebyshev(Mean, Sd) UCL	32.27
97.5% Chebyshev(Mean, Sd) UCL	39.75	99% Chebyshev(Mean, Sd) UCL	54.44

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.01	Mean	10.46
Maximum	21.3	Median	9.39
SD	7.307	Std. Error of Mean	2.983
Coefficient of Variation	0.699	Skewness	0.491
Mean of logged Data	2.108	SD of logged Data	0.787

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.47	95% Adjusted-CLT UCL (Chen-1995)	16
		95% Modified-t UCL (Johnson-1978)	16.57

Nonparametric Distribution Free UCLs

95% CLT UCL	15.36	95% Jackknife UCL	16.47
95% Standard Bootstrap UCL	14.9	95% Bootstrap-t UCL	18.75
95% Hall's Bootstrap UCL	14.11	95% Percentile Bootstrap UCL	15.01
95% BCA Bootstrap UCL	15.23		
90% Chebyshev(Mean, Sd) UCL	19.4	95% Chebyshev(Mean, Sd) UCL	23.46
97.5% Chebyshev(Mean, Sd) UCL	29.08	99% Chebyshev(Mean, Sd) UCL	40.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6	Mean	20.05
Maximum	41.3	Median	17.36
SD	14.26	Std. Error of Mean	5.821
Coefficient of Variation	0.711	Skewness	0.529
Mean of logged Data	2.753	SD of logged Data	0.792

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.78	95% Adjusted-CLT UCL (Chen-1995)	30.97
		95% Modified-t UCL (Johnson-1978)	31.99

Nonparametric Distribution Free UCLs

95% CLT UCL	29.62	95% Jackknife UCL	31.78
95% Standard Bootstrap UCL	28.79	95% Bootstrap-t UCL	34.6
95% Hall's Bootstrap UCL	27.56	95% Percentile Bootstrap UCL	28.74
95% BCA Bootstrap UCL	29.57		
90% Chebyshev(Mean, Sd) UCL	37.51	95% Chebyshev(Mean, Sd) UCL	45.42
97.5% Chebyshev(Mean, Sd) UCL	56.4	99% Chebyshev(Mean, Sd) UCL	77.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.65	Mean	4.403
Maximum	6.76	Median	4.055
SD	1.603	Std. Error of Mean	0.654
Coefficient of Variation	0.364	Skewness	0.503
Mean of logged Data	1.427	SD of logged Data	0.365

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.721	95% Adjusted-CLT UCL (Chen-1995)	5.622
		95% Modified-t UCL (Johnson-1978)	5.744

Nonparametric Distribution Free UCLs

95% CLT UCL	5.479	95% Jackknife UCL	5.721
95% Standard Bootstrap UCL	5.399	95% Bootstrap-t UCL	5.926
95% Hall's Bootstrap UCL	5.425	95% Percentile Bootstrap UCL	5.416
95% BCA Bootstrap UCL	5.447		
90% Chebyshev(Mean, Sd) UCL	6.366	95% Chebyshev(Mean, Sd) UCL	7.255
97.5% Chebyshev(Mean, Sd) UCL	8.489	99% Chebyshev(Mean, Sd) UCL	10.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.7	Mean	24.22
Maximum	47.4	Median	21.25
SD	16.5	Std. Error of Mean	6.737
Coefficient of Variation	0.681	Skewness	0.385
Mean of logged Data	2.96	SD of logged Data	0.763

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	37.79	95% Adjusted-CLT UCL (Chen-1995)	36.43
		95% Modified-t UCL (Johnson-1978)	37.97

Nonparametric Distribution Free UCLs

95% CLT UCL	35.3	95% Jackknife UCL	37.79
95% Standard Bootstrap UCL	34.25	95% Bootstrap-t UCL	39.4
95% Hall's Bootstrap UCL	31.45	95% Percentile Bootstrap UCL	34.83
95% BCA Bootstrap UCL	35.08		
90% Chebyshev(Mean, Sd) UCL	44.43	95% Chebyshev(Mean, Sd) UCL	53.58
97.5% Chebyshev(Mean, Sd) UCL	66.29	99% Chebyshev(Mean, Sd) UCL	91.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.18	Mean	1.283
Maximum	1.325	Median	1.303
SD	0.0535	Std. Error of Mean	0.0219
Coefficient of Variation	0.0418	Skewness	-1.858
Mean of logged Data	0.248	SD of logged Data	0.0429

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.327	95% Adjusted-CLT UCL (Chen-1995)	1.301
		95% Modified-t UCL (Johnson-1978)	1.324

Nonparametric Distribution Free UCLs

95% CLT UCL	1.318	95% Jackknife UCL	1.327
95% Standard Bootstrap UCL	1.316	95% Bootstrap-t UCL	1.311
95% Hall's Bootstrap UCL	1.304	95% Percentile Bootstrap UCL	1.311
95% BCA Bootstrap UCL	1.306		
90% Chebyshev(Mean, Sd) UCL	1.348	95% Chebyshev(Mean, Sd) UCL	1.378
97.5% Chebyshev(Mean, Sd) UCL	1.419	99% Chebyshev(Mean, Sd) UCL	1.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.58	Mean	16.37
Maximum	32.9	Median	14.86
SD	11.13	Std. Error of Mean	4.543
Coefficient of Variation	0.68	Skewness	0.475
Mean of logged Data	2.567	SD of logged Data	0.772

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.52	95% Adjusted-CLT UCL (Chen-1995)	24.78
		95% Modified-t UCL (Johnson-1978)	25.67

Nonparametric Distribution Free UCLs

95% CLT UCL	23.84	95% Jackknife UCL	25.52
95% Standard Bootstrap UCL	23.1	95% Bootstrap-t UCL	28.09
95% Hall's Bootstrap UCL	22.06	95% Percentile Bootstrap UCL	23.3
95% BCA Bootstrap UCL	23.55		
90% Chebyshev(Mean, Sd) UCL	29.99	95% Chebyshev(Mean, Sd) UCL	36.17
97.5% Chebyshev(Mean, Sd) UCL	44.74	99% Chebyshev(Mean, Sd) UCL	61.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.934	Mean	1.882
Maximum	3.06	Median	1.75
SD	0.891	Std. Error of Mean	0.364
Coefficient of Variation	0.473	Skewness	0.278
Mean of logged Data	0.533	SD of logged Data	0.497

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.615	95% Adjusted-CLT UCL (Chen-1995)	2.525

		95% Modified-t UCL (Johnson-1978)	2.622

Nonparametric Distribution Free UCLs

95% CLT UCL	2.481	95% Jackknife UCL	2.615
95% Standard Bootstrap UCL	2.439	95% Bootstrap-t UCL	2.631
95% Hall's Bootstrap UCL	2.284	95% Percentile Bootstrap UCL	2.428
95% BCA Bootstrap UCL	2.493		
90% Chebyshev(Mean, Sd) UCL	2.973	95% Chebyshev(Mean, Sd) UCL	3.468
97.5% Chebyshev(Mean, Sd) UCL	4.154	99% Chebyshev(Mean, Sd) UCL	5.501

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.08	Mean	8.253
Maximum	16.3	Median	7.095
SD	5.797	Std. Error of Mean	2.366
Coefficient of Variation	0.702	Skewness	0.372
Mean of logged Data	1.869	SD of logged Data	0.783

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.02	95% Adjusted-CLT UCL (Chen-1995)	12.53
		95% Modified-t UCL (Johnson-1978)	13.08

Nonparametric Distribution Free UCLs

95% CLT UCL	12.15	95% Jackknife UCL	13.02
95% Standard Bootstrap UCL	11.81	95% Bootstrap-t UCL	13.45
95% Hall's Bootstrap UCL	10.66	95% Percentile Bootstrap UCL	12.02
95% BCA Bootstrap UCL	12		
90% Chebyshev(Mean, Sd) UCL	15.35	95% Chebyshev(Mean, Sd) UCL	18.57
97.5% Chebyshev(Mean, Sd) UCL	23.03	99% Chebyshev(Mean, Sd) UCL	31.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	7.46	Mean	24.73
Maximum	50.1	Median	21.45
SD	17.27	Std. Error of Mean	7.049
Coefficient of Variation	0.698	Skewness	0.486
Mean of logged Data	2.971	SD of logged Data	0.78

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.93	95% Adjusted-CLT UCL (Chen-1995)	37.82
		95% Modified-t UCL (Johnson-1978)	39.16

Nonparametric Distribution Free UCLs

95% CLT UCL	36.32	95% Jackknife UCL	38.93
95% Standard Bootstrap UCL	35.55	95% Bootstrap-t UCL	41.55
95% Hall's Bootstrap UCL	33.38	95% Percentile Bootstrap UCL	35.41
95% BCA Bootstrap UCL	36.05		
90% Chebyshev(Mean, Sd) UCL	45.87	95% Chebyshev(Mean, Sd) UCL	55.45
97.5% Chebyshev(Mean, Sd) UCL	68.75	99% Chebyshev(Mean, Sd) UCL	94.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:37:44 PM
From File	21063F.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.7	Mean	12.65
Maximum	13.3	Median	12.75
SD	0.536	Std. Error of Mean	0.219
Coefficient of Variation	0.0423	Skewness	-1.106
Mean of logged Data	2.537	SD of logged Data	0.0431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.09	95% Adjusted-CLT UCL (Chen-1995)	12.9
		95% Modified-t UCL (Johnson-1978)	13.07

Nonparametric Distribution Free UCLs

95% CLT UCL	13.01	95% Jackknife UCL	13.09
95% Standard Bootstrap UCL	12.97	95% Bootstrap-t UCL	12.98
95% Hall's Bootstrap UCL	12.94	95% Percentile Bootstrap UCL	12.97
95% BCA Bootstrap UCL	12.92		
90% Chebyshev(Mean, Sd) UCL	13.31	95% Chebyshev(Mean, Sd) UCL	13.6
97.5% Chebyshev(Mean, Sd) UCL	14.02	99% Chebyshev(Mean, Sd) UCL	14.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.4	Mean	14.45
Maximum	17.7	Median	14.3
SD	3.311	Std. Error of Mean	1.352
Coefficient of Variation	0.229	Skewness	0.0147

Mean of logged Data	2.648	SD of logged Data	0.232

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.17	95% Adjusted-CLT UCL (Chen-1995)	16.68
		95% Modified-t UCL (Johnson-1978)	17.18

Nonparametric Distribution Free UCLs

95% CLT UCL	16.67	95% Jackknife UCL	17.17
95% Standard Bootstrap UCL	16.4	95% Bootstrap-t UCL	17.38
95% Hall's Bootstrap UCL	15.52	95% Percentile Bootstrap UCL	16.52
95% BCA Bootstrap UCL	16.52		
90% Chebyshev(Mean, Sd) UCL	18.51	95% Chebyshev(Mean, Sd) UCL	20.34
97.5% Chebyshev(Mean, Sd) UCL	22.89	99% Chebyshev(Mean, Sd) UCL	27.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	42.5	Mean	45.57
Maximum	47.6	Median	45.75
SD	2.071	Std. Error of Mean	0.846
Coefficient of Variation	0.0455	Skewness	-0.477
Mean of logged Data	3.818	SD of logged Data	0.0458

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.27	95% Adjusted-CLT UCL (Chen-1995)	46.78
		95% Modified-t UCL (Johnson-1978)	47.24

Nonparametric Distribution Free UCLs

95% CLT UCL	46.96	95% Jackknife UCL	47.27
95% Standard Bootstrap UCL	46.83	95% Bootstrap-t UCL	47.04
95% Hall's Bootstrap UCL	46.57	95% Percentile Bootstrap UCL	46.82
95% BCA Bootstrap UCL	46.82		
90% Chebyshev(Mean, Sd) UCL	48.1	95% Chebyshev(Mean, Sd) UCL	49.25
97.5% Chebyshev(Mean, Sd) UCL	50.85	99% Chebyshev(Mean, Sd) UCL	53.98

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.869	Mean	1.897
Maximum	3.29	Median	1.67
SD	0.863	Std. Error of Mean	0.352
Coefficient of Variation	0.455	Skewness	0.779
Mean of logged Data	0.553	SD of logged Data	0.464

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.606	95% Adjusted-CLT UCL (Chen-1995)	2.596
		95% Modified-t UCL (Johnson-1978)	2.625

Nonparametric Distribution Free UCLs

95% CLT UCL	2.476	95% Jackknife UCL	2.606
95% Standard Bootstrap UCL	2.422	95% Bootstrap-t UCL	3.138
95% Hall's Bootstrap UCL	7.923	95% Percentile Bootstrap UCL	2.467
95% BCA Bootstrap UCL	2.497		
90% Chebyshev(Mean, Sd) UCL	2.953	95% Chebyshev(Mean, Sd) UCL	3.432
97.5% Chebyshev(Mean, Sd) UCL	4.096	99% Chebyshev(Mean, Sd) UCL	5.401

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.367	Mean	0.834
Maximum	1.58	Median	0.585
SD	0.504	Std. Error of Mean	0.206
Coefficient of Variation	0.604	Skewness	0.928
Mean of logged Data	-0.325	SD of logged Data	0.577

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.249	95% Adjusted-CLT UCL (Chen-1995)	1.256
		95% Modified-t UCL (Johnson-1978)	1.262

Nonparametric Distribution Free UCLs

95% CLT UCL	1.173	95% Jackknife UCL	1.249
95% Standard Bootstrap UCL	1.143	95% Bootstrap-t UCL	2.468
95% Hall's Bootstrap UCL	5.102	95% Percentile Bootstrap UCL	1.169
95% BCA Bootstrap UCL	1.187		
90% Chebyshev(Mean, Sd) UCL	1.452	95% Chebyshev(Mean, Sd) UCL	1.732
97.5% Chebyshev(Mean, Sd) UCL	2.12	99% Chebyshev(Mean, Sd) UCL	2.882

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.38	Mean	2.579
Maximum	4.09	Median	2.108
SD	1.077	Std. Error of Mean	0.44
Coefficient of Variation	0.418	Skewness	0.702
Mean of logged Data	0.876	SD of logged Data	0.412

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.465	95% Adjusted-CLT UCL (Chen-1995)	3.437
		95% Modified-t UCL (Johnson-1978)	3.486

Nonparametric Distribution Free UCLs

95% CLT UCL	3.302	95% Jackknife UCL	3.465
95% Standard Bootstrap UCL	3.235	95% Bootstrap-t UCL	4.764
95% Hall's Bootstrap UCL	12.84	95% Percentile Bootstrap UCL	3.258
95% BCA Bootstrap UCL	3.313		
90% Chebyshev(Mean, Sd) UCL	3.898	95% Chebyshev(Mean, Sd) UCL	4.496
97.5% Chebyshev(Mean, Sd) UCL	5.325	99% Chebyshev(Mean, Sd) UCL	6.954

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.84	Mean	19.26
Maximum	40.1	Median	12.13
SD	16.14	Std. Error of Mean	6.589
Coefficient of Variation	0.838	Skewness	0.802
Mean of logged Data	2.645	SD of logged Data	0.87

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.53	95% Adjusted-CLT UCL (Chen-1995)	32.4
		95% Modified-t UCL (Johnson-1978)	32.89

Nonparametric Distribution Free UCLs

95% CLT UCL	30.09	95% Jackknife UCL	32.53
95% Standard Bootstrap UCL	29.23	95% Bootstrap-t UCL	55.89
95% Hall's Bootstrap UCL	101.7	95% Percentile Bootstrap UCL	29.91
95% BCA Bootstrap UCL	31.28		
90% Chebyshev(Mean, Sd) UCL	39.02	95% Chebyshev(Mean, Sd) UCL	47.98
97.5% Chebyshev(Mean, Sd) UCL	60.4	99% Chebyshev(Mean, Sd) UCL	84.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.6	Mean	25.07
Maximum	52.2	Median	16.15
SD	20.84	Std. Error of Mean	8.506
Coefficient of Variation	0.831	Skewness	0.78
Mean of logged Data	2.911	SD of logged Data	0.87

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.21	95% Adjusted-CLT UCL (Chen-1995)	41.95
		95% Modified-t UCL (Johnson-1978)	42.66

Nonparametric Distribution Free UCLs

95% CLT UCL	39.06	95% Jackknife UCL	42.21
95% Standard Bootstrap UCL	37.76	95% Bootstrap-t UCL	69.77
95% Hall's Bootstrap UCL	75.1	95% Percentile Bootstrap UCL	38.85
95% BCA Bootstrap UCL	39.15		
90% Chebyshev(Mean, Sd) UCL	50.59	95% Chebyshev(Mean, Sd) UCL	62.15
97.5% Chebyshev(Mean, Sd) UCL	78.19	99% Chebyshev(Mean, Sd) UCL	109.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.1	Mean	33.43
Maximum	68.9	Median	21.9
SD	27.41	Std. Error of Mean	11.19
Coefficient of Variation	0.82	Skewness	0.769
Mean of logged Data	3.207	SD of logged Data	0.859

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.98	95% Adjusted-CLT UCL (Chen-1995)	55.59
		95% Modified-t UCL (Johnson-1978)	56.57

Nonparametric Distribution Free UCLs

95% CLT UCL	51.84	95% Jackknife UCL	55.98
95% Standard Bootstrap UCL	50.16	95% Bootstrap-t UCL	108.3
95% Hall's Bootstrap UCL	99.03	95% Percentile Bootstrap UCL	51.32
95% BCA Bootstrap UCL	52.18		
90% Chebyshev(Mean, Sd) UCL	67	95% Chebyshev(Mean, Sd) UCL	82.21
97.5% Chebyshev(Mean, Sd) UCL	103.3	99% Chebyshev(Mean, Sd) UCL	144.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.27	Mean	16.33
Maximum	33.4	Median	10.84
SD	13.02	Std. Error of Mean	5.316
Coefficient of Variation	0.798	Skewness	0.775
Mean of logged Data	2.511	SD of logged Data	0.826

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.04	95% Adjusted-CLT UCL (Chen-1995)	26.87
		95% Modified-t UCL (Johnson-1978)	27.32

Nonparametric Distribution Free UCLs

95% CLT UCL	25.07	95% Jackknife UCL	27.04
95% Standard Bootstrap UCL	24.46	95% Bootstrap-t UCL	52.16
95% Hall's Bootstrap UCL	48.58	95% Percentile Bootstrap UCL	24.97
95% BCA Bootstrap UCL	25.65		
90% Chebyshev(Mean, Sd) UCL	32.27	95% Chebyshev(Mean, Sd) UCL	39.5
97.5% Chebyshev(Mean, Sd) UCL	49.52	99% Chebyshev(Mean, Sd) UCL	69.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.93	Mean	12.03
Maximum	25	Median	7.72
SD	9.777	Std. Error of Mean	3.992
Coefficient of Variation	0.813	Skewness	0.794
Mean of logged Data	2.198	SD of logged Data	0.836

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.08	95% Adjusted-CLT UCL (Chen-1995)	19.98
		95% Modified-t UCL (Johnson-1978)	20.29

Nonparametric Distribution Free UCLs

95% CLT UCL	18.6	95% Jackknife UCL	20.08
95% Standard Bootstrap UCL	18.09	95% Bootstrap-t UCL	40.29
95% Hall's Bootstrap UCL	33	95% Percentile Bootstrap UCL	18.52
95% BCA Bootstrap UCL	18.77		
90% Chebyshev(Mean, Sd) UCL	24.01	95% Chebyshev(Mean, Sd) UCL	29.43
97.5% Chebyshev(Mean, Sd) UCL	36.96	99% Chebyshev(Mean, Sd) UCL	51.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.43	Mean	27.25
Maximum	56.2	Median	17.9
SD	22.23	Std. Error of Mean	9.077
Coefficient of Variation	0.816	Skewness	0.769
Mean of logged Data	3.007	SD of logged Data	0.853

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	45.54	95% Adjusted-CLT UCL (Chen-1995)	45.23
		95% Modified-t UCL (Johnson-1978)	46.02

Nonparametric Distribution Free UCLs

95% CLT UCL	42.18	95% Jackknife UCL	45.54
95% Standard Bootstrap UCL	40.8	95% Bootstrap-t UCL	71.5
95% Hall's Bootstrap UCL	78.08	95% Percentile Bootstrap UCL	41.94
95% BCA Bootstrap UCL	42.77		
90% Chebyshev(Mean, Sd) UCL	54.48	95% Chebyshev(Mean, Sd) UCL	66.82
97.5% Chebyshev(Mean, Sd) UCL	83.94	99% Chebyshev(Mean, Sd) UCL	117.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.155	Mean	5.065
Maximum	9.04	Median	3.313
SD	2.843	Std. Error of Mean	1.161
Coefficient of Variation	0.561	Skewness	0.987
Mean of logged Data	1.504	SD of logged Data	0.513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.404	95% Adjusted-CLT UCL (Chen-1995)	7.474
		95% Modified-t UCL (Johnson-1978)	7.482

Nonparametric Distribution Free UCLs

95% CLT UCL	6.974	95% Jackknife UCL	7.404
95% Standard Bootstrap UCL	6.813	95% Bootstrap-t UCL	68.52
95% Hall's Bootstrap UCL	71.56	95% Percentile Bootstrap UCL	6.898
95% BCA Bootstrap UCL	6.975		
90% Chebyshev(Mean, Sd) UCL	8.547	95% Chebyshev(Mean, Sd) UCL	10.12
97.5% Chebyshev(Mean, Sd) UCL	12.31	99% Chebyshev(Mean, Sd) UCL	16.61

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 10.12

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.08	Mean	31.83
Maximum	68.5	Median	19.2
SD	27.9	Std. Error of Mean	11.39
Coefficient of Variation	0.876	Skewness	0.821
Mean of logged Data	3.115	SD of logged Data	0.917

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	54.78	95% Adjusted-CLT UCL (Chen-1995)	54.64
		95% Modified-t UCL (Johnson-1978)	55.42

Nonparametric Distribution Free UCLs

95% CLT UCL	50.56	95% Jackknife UCL	54.78
95% Standard Bootstrap UCL	48.75	95% Bootstrap-t UCL	98.57
95% Hall's Bootstrap UCL	180.7	95% Percentile Bootstrap UCL	49.6
95% BCA Bootstrap UCL	50.74		
90% Chebyshev(Mean, Sd) UCL	66	95% Chebyshev(Mean, Sd) UCL	81.47
97.5% Chebyshev(Mean, Sd) UCL	103	99% Chebyshev(Mean, Sd) UCL	145.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.25	Mean	1.279
Maximum	1.33	Median	1.265
SD	0.0312	Std. Error of Mean	0.0127
Coefficient of Variation	0.0244	Skewness	1.096
Mean of logged Data	0.246	SD of logged Data	0.0242

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.305	95% Adjusted-CLT UCL (Chen-1995)	1.306
		95% Modified-t UCL (Johnson-1978)	1.306

Nonparametric Distribution Free UCLs

95% CLT UCL	1.3	95% Jackknife UCL	1.305
95% Standard Bootstrap UCL	1.298	95% Bootstrap-t UCL	1.372
95% Hall's Bootstrap UCL	1.516	95% Percentile Bootstrap UCL	1.3
95% BCA Bootstrap UCL	1.302		
90% Chebyshev(Mean, Sd) UCL	1.317	95% Chebyshev(Mean, Sd) UCL	1.335
97.5% Chebyshev(Mean, Sd) UCL	1.359	99% Chebyshev(Mean, Sd) UCL	1.406

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	6.25	Mean	20.07
Maximum	42.2	Median	12.85
SD	16.67	Std. Error of Mean	6.805
Coefficient of Variation	0.831	Skewness	0.802
Mean of logged Data	2.692	SD of logged Data	0.864

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.78	95% Adjusted-CLT UCL (Chen-1995)	33.64
		95% Modified-t UCL (Johnson-1978)	34.15

Nonparametric Distribution Free UCLs

95% CLT UCL	31.26	95% Jackknife UCL	33.78
95% Standard Bootstrap UCL	30.19	95% Bootstrap-t UCL	58.6
95% Hall's Bootstrap UCL	109.6	95% Percentile Bootstrap UCL	31.06
95% BCA Bootstrap UCL	31.06		
90% Chebyshev(Mean, Sd) UCL	40.48	95% Chebyshev(Mean, Sd) UCL	49.73
97.5% Chebyshev(Mean, Sd) UCL	62.57	99% Chebyshev(Mean, Sd) UCL	87.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.94	Mean	3.782
Maximum	5.58	Median	3.91
SD	1.3	Std. Error of Mean	0.531
Coefficient of Variation	0.344	Skewness	-0.0839
Mean of logged Data	1.275	SD of logged Data	0.378

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.851	95% Adjusted-CLT UCL (Chen-1995)	4.635
		95% Modified-t UCL (Johnson-1978)	4.848

Nonparametric Distribution Free UCLs

95% CLT UCL	4.655	95% Jackknife UCL	4.851
95% Standard Bootstrap UCL	4.601	95% Bootstrap-t UCL	4.845
95% Hall's Bootstrap UCL	4.667	95% Percentile Bootstrap UCL	4.595
95% BCA Bootstrap UCL	4.567		
90% Chebyshev(Mean, Sd) UCL	5.374	95% Chebyshev(Mean, Sd) UCL	6.096
97.5% Chebyshev(Mean, Sd) UCL	7.097	99% Chebyshev(Mean, Sd) UCL	9.064

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.34	Mean	11.97
Maximum	28.1	Median	7.245
SD	10.58	Std. Error of Mean	4.32
Coefficient of Variation	0.884	Skewness	0.963
Mean of logged Data	2.142	SD of logged Data	0.907

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.68	95% Adjusted-CLT UCL (Chen-1995)	20.89
		95% Modified-t UCL (Johnson-1978)	20.96

Nonparametric Distribution Free UCLs

95% CLT UCL	19.08	95% Jackknife UCL	20.68
95% Standard Bootstrap UCL	18.44	95% Bootstrap-t UCL	39.52
95% Hall's Bootstrap UCL	72.5	95% Percentile Bootstrap UCL	18.83
95% BCA Bootstrap UCL	19.8		
90% Chebyshev(Mean, Sd) UCL	24.93	95% Chebyshev(Mean, Sd) UCL	30.8
97.5% Chebyshev(Mean, Sd) UCL	38.95	99% Chebyshev(Mean, Sd) UCL	54.95

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.77	Mean	30.83
Maximum	66.6	Median	18.9
SD	26.79	Std. Error of Mean	10.94
Coefficient of Variation	0.869	Skewness	0.819
Mean of logged Data	3.088	SD of logged Data	0.911

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.87	95% Adjusted-CLT UCL (Chen-1995)	52.73
		95% Modified-t UCL (Johnson-1978)	53.48

Nonparametric Distribution Free UCLs

95% CLT UCL	48.82	95% Jackknife UCL	52.87
95% Standard Bootstrap UCL	47.45	95% Bootstrap-t UCL	108.3
95% Hall's Bootstrap UCL	175.3	95% Percentile Bootstrap UCL	48.54
95% BCA Bootstrap UCL	48.8		
90% Chebyshev(Mean, Sd) UCL	63.64	95% Chebyshev(Mean, Sd) UCL	78.51
97.5% Chebyshev(Mean, Sd) UCL	99.14	99% Chebyshev(Mean, Sd) UCL	139.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:38:57 PM
From File	21063G.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.8	Mean	13.65
Maximum	14.6	Median	13.6
SD	0.666	Std. Error of Mean	0.272
Coefficient of Variation	0.0488	Skewness	0.22
Mean of logged Data	2.613	SD of logged Data	0.0487

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.2	95% Adjusted-CLT UCL (Chen-1995)	14.12
		95% Modified-t UCL (Johnson-1978)	14.2

Nonparametric Distribution Free UCLs

95% CLT UCL	14.1	95% Jackknife UCL	14.2
95% Standard Bootstrap UCL	14.05	95% Bootstrap-t UCL	14.31
95% Hall's Bootstrap UCL	14.1	95% Percentile Bootstrap UCL	14.05
95% BCA Bootstrap UCL	14.07		
90% Chebyshev(Mean, Sd) UCL	14.47	95% Chebyshev(Mean, Sd) UCL	14.83
97.5% Chebyshev(Mean, Sd) UCL	15.35	99% Chebyshev(Mean, Sd) UCL	16.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.4	Mean	22.72
Maximum	61	Median	15.6
SD	19	Std. Error of Mean	7.758
Coefficient of Variation	0.837	Skewness	2.31
Mean of logged Data	2.929	SD of logged Data	0.612

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.35	95% Adjusted-CLT UCL (Chen-1995)	43.3
		95% Modified-t UCL (Johnson-1978)	39.57

Nonparametric Distribution Free UCLs

95% CLT UCL	35.48	95% Jackknife UCL	38.35
95% Standard Bootstrap UCL	34.11	95% Bootstrap-t UCL	95.42
95% Hall's Bootstrap UCL	98.16	95% Percentile Bootstrap UCL	37.72
95% BCA Bootstrap UCL	44.8		
90% Chebyshev(Mean, Sd) UCL	45.99	95% Chebyshev(Mean, Sd) UCL	56.53
97.5% Chebyshev(Mean, Sd) UCL	71.17	99% Chebyshev(Mean, Sd) UCL	99.91

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	46.7	Mean	47.85
Maximum	49	Median	47.85
SD	0.734	Std. Error of Mean	0.3
Coefficient of Variation	0.0153	Skewness	-7.69E-17
Mean of logged Data	3.868	SD of logged Data	0.0153

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.45	95% Adjusted-CLT UCL (Chen-1995)	48.34
		95% Modified-t UCL (Johnson-1978)	48.45

Nonparametric Distribution Free UCLs

95% CLT UCL	48.34	95% Jackknife UCL	48.45
95% Standard Bootstrap UCL	48.3	95% Bootstrap-t UCL	48.4
95% Hall's Bootstrap UCL	47.85	95% Percentile Bootstrap UCL	48.27
95% BCA Bootstrap UCL	48.27		
90% Chebyshev(Mean, Sd) UCL	48.75	95% Chebyshev(Mean, Sd) UCL	49.16
97.5% Chebyshev(Mean, Sd) UCL	49.72	99% Chebyshev(Mean, Sd) UCL	50.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.55	Mean	1.938
Maximum	2.38	Median	2.01
SD	0.33	Std. Error of Mean	0.135
Coefficient of Variation	0.17	Skewness	-0.142
Mean of logged Data	0.649	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.21	95% Adjusted-CLT UCL (Chen-1995)	2.152
		95% Modified-t UCL (Johnson-1978)	2.209

Nonparametric Distribution Free UCLs

95% CLT UCL	2.16	95% Jackknife UCL	2.21
95% Standard Bootstrap UCL	2.139	95% Bootstrap-t UCL	2.18
95% Hall's Bootstrap UCL	2.115	95% Percentile Bootstrap UCL	2.138
95% BCA Bootstrap UCL	2.127		
90% Chebyshev(Mean, Sd) UCL	2.343	95% Chebyshev(Mean, Sd) UCL	2.526
97.5% Chebyshev(Mean, Sd) UCL	2.78	99% Chebyshev(Mean, Sd) UCL	3.28

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.358	Mean	0.845
Maximum	1.42	Median	0.828
SD	0.46	Std. Error of Mean	0.188
Coefficient of Variation	0.545	Skewness	0.127
Mean of logged Data	-0.31	SD of logged Data	0.598

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.223	95% Adjusted-CLT UCL (Chen-1995)	1.164
		95% Modified-t UCL (Johnson-1978)	1.225

Nonparametric Distribution Free UCLs

95% CLT UCL	1.154	95% Jackknife UCL	1.223
95% Standard Bootstrap UCL	1.132	95% Bootstrap-t UCL	1.272
95% Hall's Bootstrap UCL	1.024	95% Percentile Bootstrap UCL	1.129
95% BCA Bootstrap UCL	1.136		
90% Chebyshev(Mean, Sd) UCL	1.408	95% Chebyshev(Mean, Sd) UCL	1.663
97.5% Chebyshev(Mean, Sd) UCL	2.017	99% Chebyshev(Mean, Sd) UCL	2.713

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.995	Mean	2.426
Maximum	3.24	Median	2.283
SD	0.473	Std. Error of Mean	0.193
Coefficient of Variation	0.195	Skewness	1.146
Mean of logged Data	0.871	SD of logged Data	0.185

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.815	95% Adjusted-CLT UCL (Chen-1995)	2.84
		95% Modified-t UCL (Johnson-1978)	2.83

Nonparametric Distribution Free UCLs

95% CLT UCL	2.743	95% Jackknife UCL	2.815
95% Standard Bootstrap UCL	2.727	95% Bootstrap-t UCL	2.949
95% Hall's Bootstrap UCL	2.876	95% Percentile Bootstrap UCL	2.728
95% BCA Bootstrap UCL	2.761		
90% Chebyshev(Mean, Sd) UCL	3.005	95% Chebyshev(Mean, Sd) UCL	3.267
97.5% Chebyshev(Mean, Sd) UCL	3.631	99% Chebyshev(Mean, Sd) UCL	4.346

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.23	Mean	17.99
Maximum	34.8	Median	17.1
SD	14.01	Std. Error of Mean	5.718
Coefficient of Variation	0.779	Skewness	0.11
Mean of logged Data	2.543	SD of logged Data	0.969

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.51	95% Adjusted-CLT UCL (Chen-1995)	27.67
		95% Modified-t UCL (Johnson-1978)	29.55

Nonparametric Distribution Free UCLs

95% CLT UCL	27.39	95% Jackknife UCL	29.51
95% Standard Bootstrap UCL	26.54	95% Bootstrap-t UCL	30.3
95% Hall's Bootstrap UCL	22.97	95% Percentile Bootstrap UCL	26.78
95% BCA Bootstrap UCL	26.78		
90% Chebyshev(Mean, Sd) UCL	35.14	95% Chebyshev(Mean, Sd) UCL	42.91
97.5% Chebyshev(Mean, Sd) UCL	53.69	99% Chebyshev(Mean, Sd) UCL	74.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.8	Mean	26.55
Maximum	50.1	Median	25.73
SD	21.17	Std. Error of Mean	8.644
Coefficient of Variation	0.797	Skewness	0.0483
Mean of logged Data	2.902	SD of logged Data	1.016

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.97	95% Adjusted-CLT UCL (Chen-1995)	40.95
		95% Modified-t UCL (Johnson-1978)	44

Nonparametric Distribution Free UCLs

95% CLT UCL	40.77	95% Jackknife UCL	43.97
95% Standard Bootstrap UCL	39.72	95% Bootstrap-t UCL	45.43
95% Hall's Bootstrap UCL	33.74	95% Percentile Bootstrap UCL	39.88
95% BCA Bootstrap UCL	39.58		
90% Chebyshev(Mean, Sd) UCL	52.49	95% Chebyshev(Mean, Sd) UCL	64.23
97.5% Chebyshev(Mean, Sd) UCL	80.54	99% Chebyshev(Mean, Sd) UCL	112.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.43	Mean	33.76
Maximum	61.7	Median	33.1
SD	26.71	Std. Error of Mean	10.9
Coefficient of Variation	0.791	Skewness	0.0186
Mean of logged Data	3.148	SD of logged Data	1.009

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.73	95% Adjusted-CLT UCL (Chen-1995)	51.78
		95% Modified-t UCL (Johnson-1978)	55.74

Nonparametric Distribution Free UCLs

95% CLT UCL	51.69	95% Jackknife UCL	55.73
95% Standard Bootstrap UCL	50.22	95% Bootstrap-t UCL	55.88
95% Hall's Bootstrap UCL	42.78	95% Percentile Bootstrap UCL	49.9
95% BCA Bootstrap UCL	50.39		
90% Chebyshev(Mean, Sd) UCL	66.47	95% Chebyshev(Mean, Sd) UCL	81.28
97.5% Chebyshev(Mean, Sd) UCL	101.8	99% Chebyshev(Mean, Sd) UCL	142.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.6	Mean	16.77
Maximum	30.8	Median	16.36
SD	13.36	Std. Error of Mean	5.454
Coefficient of Variation	0.797	Skewness	0.0223
Mean of logged Data	2.439	SD of logged Data	1.022

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.76	95% Adjusted-CLT UCL (Chen-1995)	25.79
		95% Modified-t UCL (Johnson-1978)	27.76

Nonparametric Distribution Free UCLs

95% CLT UCL	25.74	95% Jackknife UCL	27.76
95% Standard Bootstrap UCL	24.99	95% Bootstrap-t UCL	28.12
95% Hall's Bootstrap UCL	21.22	95% Percentile Bootstrap UCL	25.03
95% BCA Bootstrap UCL	25.27		
90% Chebyshev(Mean, Sd) UCL	33.13	95% Chebyshev(Mean, Sd) UCL	40.54
97.5% Chebyshev(Mean, Sd) UCL	50.83	99% Chebyshev(Mean, Sd) UCL	71.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.06	Mean	13.11
Maximum	26.7	Median	11.84
SD	10.7	Std. Error of Mean	4.367
Coefficient of Variation	0.816	Skewness	0.195
Mean of logged Data	2.19	SD of logged Data	1.019

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.91	95% Adjusted-CLT UCL (Chen-1995)	20.66
		95% Modified-t UCL (Johnson-1978)	21.97

Nonparametric Distribution Free UCLs

95% CLT UCL	20.29	95% Jackknife UCL	21.91
95% Standard Bootstrap UCL	19.63	95% Bootstrap-t UCL	22.49
95% Hall's Bootstrap UCL	17.11	95% Percentile Bootstrap UCL	19.71
95% BCA Bootstrap UCL	19.6		
90% Chebyshev(Mean, Sd) UCL	26.21	95% Chebyshev(Mean, Sd) UCL	32.14
97.5% Chebyshev(Mean, Sd) UCL	40.38	99% Chebyshev(Mean, Sd) UCL	56.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.84	Mean	26.47
Maximum	50.8	Median	24.91
SD	21.01	Std. Error of Mean	8.577
Coefficient of Variation	0.794	Skewness	0.0908
Mean of logged Data	2.906	SD of logged Data	1.005

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.75	95% Adjusted-CLT UCL (Chen-1995)	40.91
		95% Modified-t UCL (Johnson-1978)	43.8

Nonparametric Distribution Free UCLs

95% CLT UCL	40.57	95% Jackknife UCL	43.75
95% Standard Bootstrap UCL	39.24	95% Bootstrap-t UCL	44.55
95% Hall's Bootstrap UCL	33.95	95% Percentile Bootstrap UCL	39.51
95% BCA Bootstrap UCL	39.87		
90% Chebyshev(Mean, Sd) UCL	52.2	95% Chebyshev(Mean, Sd) UCL	63.85
97.5% Chebyshev(Mean, Sd) UCL	80.03	99% Chebyshev(Mean, Sd) UCL	111.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.075	Mean	5.268
Maximum	8	Median	5.123
SD	2.315	Std. Error of Mean	0.945
Coefficient of Variation	0.44	Skewness	0.0966
Mean of logged Data	1.575	SD of logged Data	0.461

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.173	95% Adjusted-CLT UCL (Chen-1995)	6.863
		95% Modified-t UCL (Johnson-1978)	7.179

Nonparametric Distribution Free UCLs

95% CLT UCL	6.823	95% Jackknife UCL	7.173
95% Standard Bootstrap UCL	6.648	95% Bootstrap-t UCL	7.374
95% Hall's Bootstrap UCL	6.063	95% Percentile Bootstrap UCL	6.719
95% BCA Bootstrap UCL	6.731		
90% Chebyshev(Mean, Sd) UCL	8.104	95% Chebyshev(Mean, Sd) UCL	9.389
97.5% Chebyshev(Mean, Sd) UCL	11.17	99% Chebyshev(Mean, Sd) UCL	14.67

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.24	Mean	30.26
Maximum	57.6	Median	28.15
SD	23.36	Std. Error of Mean	9.536
Coefficient of Variation	0.772	Skewness	0.101
Mean of logged Data	3.072	SD of logged Data	0.955

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.48	95% Adjusted-CLT UCL (Chen-1995)	46.36
		95% Modified-t UCL (Johnson-1978)	49.54

Nonparametric Distribution Free UCLs

95% CLT UCL	45.95	95% Jackknife UCL	49.48
95% Standard Bootstrap UCL	44.65	95% Bootstrap-t UCL	50.02
95% Hall's Bootstrap UCL	38.6	95% Percentile Bootstrap UCL	44.62
95% BCA Bootstrap UCL	44.62		
90% Chebyshev(Mean, Sd) UCL	58.87	95% Chebyshev(Mean, Sd) UCL	71.83
97.5% Chebyshev(Mean, Sd) UCL	89.81	99% Chebyshev(Mean, Sd) UCL	125.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.23	Mean	1.289
Maximum	1.32	Median	1.293
SD	0.0322	Std. Error of Mean	0.0131
Coefficient of Variation	0.0249	Skewness	-1.447
Mean of logged Data	0.254	SD of logged Data	0.0253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.316	95% Adjusted-CLT UCL (Chen-1995)	1.302
		95% Modified-t UCL (Johnson-1978)	1.314

Nonparametric Distribution Free UCLs

95% CLT UCL	1.311	95% Jackknife UCL	1.316
95% Standard Bootstrap UCL	1.309	95% Bootstrap-t UCL	1.309
95% Hall's Bootstrap UCL	1.305	95% Percentile Bootstrap UCL	1.308
95% BCA Bootstrap UCL	1.303		
90% Chebyshev(Mean, Sd) UCL	1.329	95% Chebyshev(Mean, Sd) UCL	1.346
97.5% Chebyshev(Mean, Sd) UCL	1.371	99% Chebyshev(Mean, Sd) UCL	1.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.59	Mean	19.96
Maximum	37	Median	19.7
SD	15.69	Std. Error of Mean	6.407
Coefficient of Variation	0.786	Skewness	0.0315
Mean of logged Data	2.63	SD of logged Data	0.996

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.87	95% Adjusted-CLT UCL (Chen-1995)	30.59
		95% Modified-t UCL (Johnson-1978)	32.89

Nonparametric Distribution Free UCLs

95% CLT UCL	30.5	95% Jackknife UCL	32.87
95% Standard Bootstrap UCL	29.41	95% Bootstrap-t UCL	33.6
95% Hall's Bootstrap UCL	25.26	95% Percentile Bootstrap UCL	29.83
95% BCA Bootstrap UCL	29.6		
90% Chebyshev(Mean, Sd) UCL	39.18	95% Chebyshev(Mean, Sd) UCL	47.89
97.5% Chebyshev(Mean, Sd) UCL	59.97	99% Chebyshev(Mean, Sd) UCL	83.71

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.69	Mean	3.852
Maximum	5.22	Median	3.735
SD	0.928	Std. Error of Mean	0.379
Coefficient of Variation	0.241	Skewness	0.359
Mean of logged Data	1.324	SD of logged Data	0.242

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.615	95% Adjusted-CLT UCL (Chen-1995)	4.534
		95% Modified-t UCL (Johnson-1978)	4.624

Nonparametric Distribution Free UCLs

95% CLT UCL	4.475	95% Jackknife UCL	4.615
95% Standard Bootstrap UCL	4.414	95% Bootstrap-t UCL	4.765
95% Hall's Bootstrap UCL	4.665	95% Percentile Bootstrap UCL	4.413
95% BCA Bootstrap UCL	4.457		
90% Chebyshev(Mean, Sd) UCL	4.988	95% Chebyshev(Mean, Sd) UCL	5.503
97.5% Chebyshev(Mean, Sd) UCL	6.218	99% Chebyshev(Mean, Sd) UCL	7.621

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.82	Mean	10.52
Maximum	20	Median	9.95
SD	7.699	Std. Error of Mean	3.143
Coefficient of Variation	0.732	Skewness	0.138
Mean of logged Data	2.063	SD of logged Data	0.88

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.86	95% Adjusted-CLT UCL (Chen-1995)	15.88
		95% Modified-t UCL (Johnson-1978)	16.88

Nonparametric Distribution Free UCLs

95% CLT UCL	15.69	95% Jackknife UCL	16.86
95% Standard Bootstrap UCL	15.32	95% Bootstrap-t UCL	17.51
95% Hall's Bootstrap UCL	13.38	95% Percentile Bootstrap UCL	15.35
95% BCA Bootstrap UCL	15.44		
90% Chebyshev(Mean, Sd) UCL	19.95	95% Chebyshev(Mean, Sd) UCL	24.22
97.5% Chebyshev(Mean, Sd) UCL	30.15	99% Chebyshev(Mean, Sd) UCL	41.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	7.04	Mean	29.62
Maximum	57.7	Median	27.55
SD	22.98	Std. Error of Mean	9.381
Coefficient of Variation	0.776	Skewness	0.136
Mean of logged Data	3.048	SD of logged Data	0.957

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.52	95% Adjusted-CLT UCL (Chen-1995)	45.61
		95% Modified-t UCL (Johnson-1978)	48.61

Nonparametric Distribution Free UCLs

95% CLT UCL	45.05	95% Jackknife UCL	48.52
95% Standard Bootstrap UCL	43.82	95% Bootstrap-t UCL	49.67
95% Hall's Bootstrap UCL	38.02	95% Percentile Bootstrap UCL	43.96
95% BCA Bootstrap UCL	43.96		
90% Chebyshev(Mean, Sd) UCL	57.76	95% Chebyshev(Mean, Sd) UCL	70.51
97.5% Chebyshev(Mean, Sd) UCL	88.2	99% Chebyshev(Mean, Sd) UCL	123

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:40:24 PM
From File	21063H.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15	Mean	16.37
Maximum	17.3	Median	16.45
SD	0.852	Std. Error of Mean	0.348
Coefficient of Variation	0.0521	Skewness	-0.685
Mean of logged Data	2.794	SD of logged Data	0.0528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.07	95% Adjusted-CLT UCL (Chen-1995)	16.84
		95% Modified-t UCL (Johnson-1978)	17.05

Nonparametric Distribution Free UCLs

95% CLT UCL	16.94	95% Jackknife UCL	17.07
95% Standard Bootstrap UCL	16.88	95% Bootstrap-t UCL	16.96
95% Hall's Bootstrap UCL	16.83	95% Percentile Bootstrap UCL	16.85
95% BCA Bootstrap UCL	16.82		
90% Chebyshev(Mean, Sd) UCL	17.41	95% Chebyshev(Mean, Sd) UCL	17.88
97.5% Chebyshev(Mean, Sd) UCL	18.54	99% Chebyshev(Mean, Sd) UCL	19.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	29.98
Maximum	63.6	Median	17.45
SD	22.5	Std. Error of Mean	9.186
Coefficient of Variation	0.75	Skewness	1.012

Mean of logged Data	3.183	SD of logged Data	0.7

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.49	95% Adjusted-CLT UCL (Chen-1995)	49.15
		95% Modified-t UCL (Johnson-1978)	49.13

Nonparametric Distribution Free UCLs

95% CLT UCL	45.09	95% Jackknife UCL	48.49
95% Standard Bootstrap UCL	44.01	95% Bootstrap-t UCL	137.8
95% Hall's Bootstrap UCL	204.1	95% Percentile Bootstrap UCL	44.65
95% BCA Bootstrap UCL	46.32		
90% Chebyshev(Mean, Sd) UCL	57.54	95% Chebyshev(Mean, Sd) UCL	70.02
97.5% Chebyshev(Mean, Sd) UCL	87.35	99% Chebyshev(Mean, Sd) UCL	121.4

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48	Mean	52.65
Maximum	57.3	Median	52.55
SD	3.717	Std. Error of Mean	1.518
Coefficient of Variation	0.0706	Skewness	0.0158
Mean of logged Data	3.962	SD of logged Data	0.0707

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.71	95% Adjusted-CLT UCL (Chen-1995)	55.16
		95% Modified-t UCL (Johnson-1978)	55.71

Nonparametric Distribution Free UCLs

95% CLT UCL	55.15	95% Jackknife UCL	55.71
95% Standard Bootstrap UCL	54.97	95% Bootstrap-t UCL	55.94
95% Hall's Bootstrap UCL	54.53	95% Percentile Bootstrap UCL	55.03
95% BCA Bootstrap UCL	54.92		
90% Chebyshev(Mean, Sd) UCL	57.2	95% Chebyshev(Mean, Sd) UCL	59.27
97.5% Chebyshev(Mean, Sd) UCL	62.13	99% Chebyshev(Mean, Sd) UCL	67.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.41	Mean	2.45
Maximum	4.04	Median	2.28
SD	0.904	Std. Error of Mean	0.369
Coefficient of Variation	0.369	Skewness	1.119
Mean of logged Data	0.843	SD of logged Data	0.355

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.194	95% Adjusted-CLT UCL (Chen-1995)	3.237
		95% Modified-t UCL (Johnson-1978)	3.222

Nonparametric Distribution Free UCLs

95% CLT UCL	3.057	95% Jackknife UCL	3.194
95% Standard Bootstrap UCL	2.994	95% Bootstrap-t UCL	3.627
95% Hall's Bootstrap UCL	7.122	95% Percentile Bootstrap UCL	3.025
95% BCA Bootstrap UCL	3.107		
90% Chebyshev(Mean, Sd) UCL	3.557	95% Chebyshev(Mean, Sd) UCL	4.059
97.5% Chebyshev(Mean, Sd) UCL	4.755	99% Chebyshev(Mean, Sd) UCL	6.123

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.553	Mean	1.176
Maximum	2.13	Median	1.093
SD	0.606	Std. Error of Mean	0.247
Coefficient of Variation	0.515	Skewness	0.674
Mean of logged Data	0.0485	SD of logged Data	0.526

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.674	95% Adjusted-CLT UCL (Chen-1995)	1.655
		95% Modified-t UCL (Johnson-1978)	1.685

Nonparametric Distribution Free UCLs

95% CLT UCL	1.582	95% Jackknife UCL	1.674
95% Standard Bootstrap UCL	1.542	95% Bootstrap-t UCL	1.867
95% Hall's Bootstrap UCL	1.594	95% Percentile Bootstrap UCL	1.54
95% BCA Bootstrap UCL	1.568		
90% Chebyshev(Mean, Sd) UCL	1.917	95% Chebyshev(Mean, Sd) UCL	2.253
97.5% Chebyshev(Mean, Sd) UCL	2.72	99% Chebyshev(Mean, Sd) UCL	3.636

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.115	Mean	6.008
Maximum	8.19	Median	6.385
SD	2.342	Std. Error of Mean	0.956
Coefficient of Variation	0.39	Skewness	-0.917
Mean of logged Data	1.703	SD of logged Data	0.513

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.934	95% Adjusted-CLT UCL (Chen-1995)	7.198
		95% Modified-t UCL (Johnson-1978)	7.875

Nonparametric Distribution Free UCLs

95% CLT UCL	7.58	95% Jackknife UCL	7.934
95% Standard Bootstrap UCL	7.446	95% Bootstrap-t UCL	7.644
95% Hall's Bootstrap UCL	7.205	95% Percentile Bootstrap UCL	7.393
95% BCA Bootstrap UCL	7.177		
90% Chebyshev(Mean, Sd) UCL	8.876	95% Chebyshev(Mean, Sd) UCL	10.18
97.5% Chebyshev(Mean, Sd) UCL	11.98	99% Chebyshev(Mean, Sd) UCL	15.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.83	Mean	36.07
Maximum	57.9	Median	38
SD	22.66	Std. Error of Mean	9.253
Coefficient of Variation	0.628	Skewness	-0.0918
Mean of logged Data	3.369	SD of logged Data	0.768

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.72	95% Adjusted-CLT UCL (Chen-1995)	50.92
		95% Modified-t UCL (Johnson-1978)	54.66

Nonparametric Distribution Free UCLs

95% CLT UCL	51.29	95% Jackknife UCL	54.72
95% Standard Bootstrap UCL	50.3	95% Bootstrap-t UCL	54.63
95% Hall's Bootstrap UCL	44.57	95% Percentile Bootstrap UCL	50.12
95% BCA Bootstrap UCL	50.02		
90% Chebyshev(Mean, Sd) UCL	63.83	95% Chebyshev(Mean, Sd) UCL	76.4
97.5% Chebyshev(Mean, Sd) UCL	93.85	99% Chebyshev(Mean, Sd) UCL	128.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.8	Mean	45.78
Maximum	73.1	Median	47.85
SD	28.44	Std. Error of Mean	11.61
Coefficient of Variation	0.621	Skewness	-0.0721
Mean of logged Data	3.618	SD of logged Data	0.743

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	69.18	95% Adjusted-CLT UCL (Chen-1995)	64.52
		95% Modified-t UCL (Johnson-1978)	69.12

Nonparametric Distribution Free UCLs

95% CLT UCL	64.88	95% Jackknife UCL	69.18
95% Standard Bootstrap UCL	62.71	95% Bootstrap-t UCL	68.94
95% Hall's Bootstrap UCL	56.06	95% Percentile Bootstrap UCL	63.08
95% BCA Bootstrap UCL	63.05		
90% Chebyshev(Mean, Sd) UCL	80.62	95% Chebyshev(Mean, Sd) UCL	96.4
97.5% Chebyshev(Mean, Sd) UCL	118.3	99% Chebyshev(Mean, Sd) UCL	161.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.3	Mean	65.68
Maximum	107	Median	68.7
SD	42.31	Std. Error of Mean	17.27
Coefficient of Variation	0.644	Skewness	-0.0526
Mean of logged Data	3.962	SD of logged Data	0.772

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	100.5	95% Adjusted-CLT UCL (Chen-1995)	93.7
		95% Modified-t UCL (Johnson-1978)	100.4

Nonparametric Distribution Free UCLs

95% CLT UCL	94.1	95% Jackknife UCL	100.5
95% Standard Bootstrap UCL	91.57	95% Bootstrap-t UCL	100.7
95% Hall's Bootstrap UCL	80.65	95% Percentile Bootstrap UCL	91.57
95% BCA Bootstrap UCL	91.4		
90% Chebyshev(Mean, Sd) UCL	117.5	95% Chebyshev(Mean, Sd) UCL	141
97.5% Chebyshev(Mean, Sd) UCL	173.6	99% Chebyshev(Mean, Sd) UCL	237.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.6	Mean	36.93
Maximum	62.2	Median	38.75
SD	24.69	Std. Error of Mean	10.08
Coefficient of Variation	0.669	Skewness	-0.0387
Mean of logged Data	3.365	SD of logged Data	0.81

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.25	95% Adjusted-CLT UCL (Chen-1995)	53.34
		95% Modified-t UCL (Johnson-1978)	57.22

Nonparametric Distribution Free UCLs

95% CLT UCL	53.52	95% Jackknife UCL	57.25
95% Standard Bootstrap UCL	51.94	95% Bootstrap-t UCL	57.12
95% Hall's Bootstrap UCL	45.79	95% Percentile Bootstrap UCL	52.18
95% BCA Bootstrap UCL	52.13		
90% Chebyshev(Mean, Sd) UCL	67.18	95% Chebyshev(Mean, Sd) UCL	80.88
97.5% Chebyshev(Mean, Sd) UCL	99.89	99% Chebyshev(Mean, Sd) UCL	137.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.61	Mean	21.38

Maximum	35.1	Median	21.85
SD	12.71	Std. Error of Mean	5.188
Coefficient of Variation	0.594	Skewness	-0.016
Mean of logged Data	2.882	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.83	95% Adjusted-CLT UCL (Chen-1995)	29.87
		95% Modified-t UCL (Johnson-1978)	31.82

Nonparametric Distribution Free UCLs

95% CLT UCL	29.91	95% Jackknife UCL	31.83
95% Standard Bootstrap UCL	29.18	95% Bootstrap-t UCL	32.39
95% Hall's Bootstrap UCL	26	95% Percentile Bootstrap UCL	29.11
95% BCA Bootstrap UCL	29.18		
90% Chebyshev(Mean, Sd) UCL	36.94	95% Chebyshev(Mean, Sd) UCL	43.99
97.5% Chebyshev(Mean, Sd) UCL	53.77	99% Chebyshev(Mean, Sd) UCL	72.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.2	Mean	38.63
Maximum	61.6	Median	39.35
SD	23.07	Std. Error of Mean	9.419
Coefficient of Variation	0.597	Skewness	-0.0287
Mean of logged Data	3.472	SD of logged Data	0.687

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.61	95% Adjusted-CLT UCL (Chen-1995)	54.01
		95% Modified-t UCL (Johnson-1978)	57.6

Nonparametric Distribution Free UCLs

95% CLT UCL	54.13	95% Jackknife UCL	57.61

95% Standard Bootstrap UCL	52.43	95% Bootstrap-t UCL	57.77
95% Hall's Bootstrap UCL	46.71	95% Percentile Bootstrap UCL	52.77
95% BCA Bootstrap UCL	52.72		
90% Chebyshev(Mean, Sd) UCL	66.89	95% Chebyshev(Mean, Sd) UCL	79.69
97.5% Chebyshev(Mean, Sd) UCL	97.46	99% Chebyshev(Mean, Sd) UCL	132.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.7	Mean	9.46
Maximum	15.3	Median	9.955
SD	5.701	Std. Error of Mean	2.328
Coefficient of Variation	0.603	Skewness	-0.107
Mean of logged Data	2.049	SD of logged Data	0.733

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.15	95% Adjusted-CLT UCL (Chen-1995)	13.18
		95% Modified-t UCL (Johnson-1978)	14.13

Nonparametric Distribution Free UCLs

95% CLT UCL	13.29	95% Jackknife UCL	14.15
95% Standard Bootstrap UCL	12.97	95% Bootstrap-t UCL	14.16
95% Hall's Bootstrap UCL	11.66	95% Percentile Bootstrap UCL	12.98
95% BCA Bootstrap UCL	12.94		
90% Chebyshev(Mean, Sd) UCL	16.44	95% Chebyshev(Mean, Sd) UCL	19.61
97.5% Chebyshev(Mean, Sd) UCL	24	99% Chebyshev(Mean, Sd) UCL	32.62

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.5	Mean	50.42
Maximum	82	Median	51.7
SD	30.81	Std. Error of Mean	12.58
Coefficient of Variation	0.611	Skewness	-0.0346
Mean of logged Data	3.727	SD of logged Data	0.713

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	75.76	95% Adjusted-CLT UCL (Chen-1995)	70.91
		95% Modified-t UCL (Johnson-1978)	75.73

Nonparametric Distribution Free UCLs

95% CLT UCL	71.1	95% Jackknife UCL	75.76
95% Standard Bootstrap UCL	68.87	95% Bootstrap-t UCL	76.26
95% Hall's Bootstrap UCL	61.36	95% Percentile Bootstrap UCL	69.23
95% BCA Bootstrap UCL	69.25		
90% Chebyshev(Mean, Sd) UCL	88.15	95% Chebyshev(Mean, Sd) UCL	105.2
97.5% Chebyshev(Mean, Sd) UCL	129	99% Chebyshev(Mean, Sd) UCL	175.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.235	Mean	1.274
Maximum	1.315	Median	1.273
SD	0.0299	Std. Error of Mean	0.0122
Coefficient of Variation	0.0235	Skewness	0.124
Mean of logged Data	0.242	SD of logged Data	0.0235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1.299	95% Adjusted-CLT UCL (Chen-1995)	1.295
		95% Modified-t UCL (Johnson-1978)	1.299

Nonparametric Distribution Free UCLs

95% CLT UCL	1.294	95% Jackknife UCL	1.299
95% Standard Bootstrap UCL	1.293	95% Bootstrap-t UCL	1.301
95% Hall's Bootstrap UCL	1.304	95% Percentile Bootstrap UCL	1.293
95% BCA Bootstrap UCL	1.292		
90% Chebyshev(Mean, Sd) UCL	1.311	95% Chebyshev(Mean, Sd) UCL	1.327
97.5% Chebyshev(Mean, Sd) UCL	1.35	99% Chebyshev(Mean, Sd) UCL	1.396

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.8	Mean	42.77
Maximum	72	Median	44.45
SD	28.66	Std. Error of Mean	11.7
Coefficient of Variation	0.67	Skewness	-0.0376
Mean of logged Data	3.51	SD of logged Data	0.814

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	66.34	95% Adjusted-CLT UCL (Chen-1995)	61.82
		95% Modified-t UCL (Johnson-1978)	66.31

Nonparametric Distribution Free UCLs

95% CLT UCL	62.01	95% Jackknife UCL	66.34
95% Standard Bootstrap UCL	60.89	95% Bootstrap-t UCL	66.81
95% Hall's Bootstrap UCL	52.88	95% Percentile Bootstrap UCL	60.32
95% BCA Bootstrap UCL	60.42		
90% Chebyshev(Mean, Sd) UCL	77.87	95% Chebyshev(Mean, Sd) UCL	93.77
97.5% Chebyshev(Mean, Sd) UCL	115.8	99% Chebyshev(Mean, Sd) UCL	159.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.25	Mean	3.807
Maximum	5.43	Median	3.72
SD	1.061	Std. Error of Mean	0.433
Coefficient of Variation	0.279	Skewness	0.146
Mean of logged Data	1.302	SD of logged Data	0.295

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.679	95% Adjusted-CLT UCL (Chen-1995)	4.547
		95% Modified-t UCL (Johnson-1978)	4.684

Nonparametric Distribution Free UCLs

95% CLT UCL	4.519	95% Jackknife UCL	4.679
95% Standard Bootstrap UCL	4.456	95% Bootstrap-t UCL	4.735
95% Hall's Bootstrap UCL	4.97	95% Percentile Bootstrap UCL	4.465
95% BCA Bootstrap UCL	4.458		
90% Chebyshev(Mean, Sd) UCL	5.106	95% Chebyshev(Mean, Sd) UCL	5.695
97.5% Chebyshev(Mean, Sd) UCL	6.512	99% Chebyshev(Mean, Sd) UCL	8.116

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.62	Mean	17.64
Maximum	28.5	Median	17.45
SD	10.4	Std. Error of Mean	4.245
Coefficient of Variation	0.589	Skewness	0.011
Mean of logged Data	2.696	SD of logged Data	0.671

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.19	95% Adjusted-CLT UCL (Chen-1995)	24.64

		95% Modified-t UCL (Johnson-1978)	26.19

Nonparametric Distribution Free UCLs

95% CLT UCL	24.62	95% Jackknife UCL	26.19
95% Standard Bootstrap UCL	24.13	95% Bootstrap-t UCL	25.76
95% Hall's Bootstrap UCL	21.51	95% Percentile Bootstrap UCL	24.22
95% BCA Bootstrap UCL	24.34		
90% Chebyshev(Mean, Sd) UCL	30.37	95% Chebyshev(Mean, Sd) UCL	36.14
97.5% Chebyshev(Mean, Sd) UCL	44.15	99% Chebyshev(Mean, Sd) UCL	59.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.5	Mean	49.8
Maximum	81.9	Median	50.15
SD	30	Std. Error of Mean	12.25
Coefficient of Variation	0.602	Skewness	-0.0199
Mean of logged Data	3.721	SD of logged Data	0.701

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	74.48	95% Adjusted-CLT UCL (Chen-1995)	69.84
		95% Modified-t UCL (Johnson-1978)	74.46

Nonparametric Distribution Free UCLs

95% CLT UCL	69.95	95% Jackknife UCL	74.48
95% Standard Bootstrap UCL	68.02	95% Bootstrap-t UCL	74.98
95% Hall's Bootstrap UCL	60.73	95% Percentile Bootstrap UCL	68.53
95% BCA Bootstrap UCL	68.57		
90% Chebyshev(Mean, Sd) UCL	86.55	95% Chebyshev(Mean, Sd) UCL	103.2
97.5% Chebyshev(Mean, Sd) UCL	126.3	99% Chebyshev(Mean, Sd) UCL	171.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:41:51 PM
From File	21063I.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.8	Mean	13.55
Maximum	14.3	Median	13.4
SD	0.586	Std. Error of Mean	0.239
Coefficient of Variation	0.0432	Skewness	0.336
Mean of logged Data	2.606	SD of logged Data	0.0431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.03	95% Adjusted-CLT UCL (Chen-1995)	13.98
		95% Modified-t UCL (Johnson-1978)	14.04

Nonparametric Distribution Free UCLs

95% CLT UCL	13.94	95% Jackknife UCL	14.03
95% Standard Bootstrap UCL	13.9	95% Bootstrap-t UCL	14.34
95% Hall's Bootstrap UCL	15.16	95% Percentile Bootstrap UCL	13.95
95% BCA Bootstrap UCL	13.93		
90% Chebyshev(Mean, Sd) UCL	14.27	95% Chebyshev(Mean, Sd) UCL	14.59
97.5% Chebyshev(Mean, Sd) UCL	15.04	99% Chebyshev(Mean, Sd) UCL	15.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.8	Mean	43.03
Maximum	104	Median	26.4
SD	33.68	Std. Error of Mean	13.75
Coefficient of Variation	0.783	Skewness	1.534
Mean of logged Data	3.541	SD of logged Data	0.704

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	70.74	95% Adjusted-CLT UCL (Chen-1995)	74.85
		95% Modified-t UCL (Johnson-1978)	72.18

Nonparametric Distribution Free UCLs

95% CLT UCL	65.65	95% Jackknife UCL	70.74
95% Standard Bootstrap UCL	64.14	95% Bootstrap-t UCL	175.4
95% Hall's Bootstrap UCL	263.5	95% Percentile Bootstrap UCL	65.15
95% BCA Bootstrap UCL	70.82		
90% Chebyshev(Mean, Sd) UCL	84.29	95% Chebyshev(Mean, Sd) UCL	103
97.5% Chebyshev(Mean, Sd) UCL	128.9	99% Chebyshev(Mean, Sd) UCL	179.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.9	Mean	45.42
Maximum	47	Median	45.5
SD	1.042	Std. Error of Mean	0.425
Coefficient of Variation	0.0229	Skewness	0.0858
Mean of logged Data	3.816	SD of logged Data	0.0229

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.27	95% Adjusted-CLT UCL (Chen-1995)	46.13
		95% Modified-t UCL (Johnson-1978)	46.28

Nonparametric Distribution Free UCLs

95% CLT UCL	46.12	95% Jackknife UCL	46.27
95% Standard Bootstrap UCL	46.06	95% Bootstrap-t UCL	46.24
95% Hall's Bootstrap UCL	46.28	95% Percentile Bootstrap UCL	46.07
95% BCA Bootstrap UCL	46.03		
90% Chebyshev(Mean, Sd) UCL	46.69	95% Chebyshev(Mean, Sd) UCL	47.27
97.5% Chebyshev(Mean, Sd) UCL	48.07	99% Chebyshev(Mean, Sd) UCL	49.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.66	Mean	2.067
Maximum	2.68	Median	1.915
SD	0.394	Std. Error of Mean	0.161
Coefficient of Variation	0.191	Skewness	0.865
Mean of logged Data	0.711	SD of logged Data	0.184

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.391	95% Adjusted-CLT UCL (Chen-1995)	2.392
		95% Modified-t UCL (Johnson-1978)	2.401

Nonparametric Distribution Free UCLs

95% CLT UCL	2.331	95% Jackknife UCL	2.391
95% Standard Bootstrap UCL	2.31	95% Bootstrap-t UCL	2.924
95% Hall's Bootstrap UCL	4.553	95% Percentile Bootstrap UCL	2.325
95% BCA Bootstrap UCL	2.36		
90% Chebyshev(Mean, Sd) UCL	2.55	95% Chebyshev(Mean, Sd) UCL	2.768
97.5% Chebyshev(Mean, Sd) UCL	3.072	99% Chebyshev(Mean, Sd) UCL	3.668

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.49	Mean	0.96
Maximum	1.45	Median	1.047
SD	0.387	Std. Error of Mean	0.158
Coefficient of Variation	0.403	Skewness	-0.274
Mean of logged Data	-0.121	SD of logged Data	0.458

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.278	95% Adjusted-CLT UCL (Chen-1995)	1.201
		95% Modified-t UCL (Johnson-1978)	1.276

Nonparametric Distribution Free UCLs

95% CLT UCL	1.22	95% Jackknife UCL	1.278
95% Standard Bootstrap UCL	1.191	95% Bootstrap-t UCL	1.261
95% Hall's Bootstrap UCL	1.158	95% Percentile Bootstrap UCL	1.196
95% BCA Bootstrap UCL	1.182		
90% Chebyshev(Mean, Sd) UCL	1.434	95% Chebyshev(Mean, Sd) UCL	1.649
97.5% Chebyshev(Mean, Sd) UCL	1.947	99% Chebyshev(Mean, Sd) UCL	2.532

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.59	Mean	3.463
Maximum	6.46	Median	2.193
SD	2.291	Std. Error of Mean	0.935
Coefficient of Variation	0.662	Skewness	0.925
Mean of logged Data	1.072	SD of logged Data	0.62

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.347	95% Adjusted-CLT UCL (Chen-1995)	5.378
		95% Modified-t UCL (Johnson-1978)	5.406

Nonparametric Distribution Free UCLs

95% CLT UCL	5.001	95% Jackknife UCL	5.347
95% Standard Bootstrap UCL	4.847	95% Bootstrap-t UCL	16.45
95% Hall's Bootstrap UCL	25.88	95% Percentile Bootstrap UCL	4.983
95% BCA Bootstrap UCL	4.985		
90% Chebyshev(Mean, Sd) UCL	6.269	95% Chebyshev(Mean, Sd) UCL	7.54
97.5% Chebyshev(Mean, Sd) UCL	9.304	99% Chebyshev(Mean, Sd) UCL	12.77

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.02	Mean	22.93
Maximum	43.6	Median	19.8
SD	15.72	Std. Error of Mean	6.418
Coefficient of Variation	0.686	Skewness	0.407
Mean of logged Data	2.899	SD of logged Data	0.78

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.86	95% Adjusted-CLT UCL (Chen-1995)	34.62
		95% Modified-t UCL (Johnson-1978)	36.04

Nonparametric Distribution Free UCLs

95% CLT UCL	33.48	95% Jackknife UCL	35.86
95% Standard Bootstrap UCL	32.69	95% Bootstrap-t UCL	44.83
95% Hall's Bootstrap UCL	35.55	95% Percentile Bootstrap UCL	32.94
95% BCA Bootstrap UCL	33.14		
90% Chebyshev(Mean, Sd) UCL	42.18	95% Chebyshev(Mean, Sd) UCL	50.9
97.5% Chebyshev(Mean, Sd) UCL	63	99% Chebyshev(Mean, Sd) UCL	86.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.2	Mean	31.8
Maximum	54	Median	30.65
SD	19.66	Std. Error of Mean	8.025
Coefficient of Variation	0.618	Skewness	0.0945
Mean of logged Data	3.26	SD of logged Data	0.729

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.97	95% Adjusted-CLT UCL (Chen-1995)	45.33
		95% Modified-t UCL (Johnson-1978)	48.02

Nonparametric Distribution Free UCLs

95% CLT UCL	45	95% Jackknife UCL	47.97
95% Standard Bootstrap UCL	43.94	95% Bootstrap-t UCL	46.17
95% Hall's Bootstrap UCL	42.98	95% Percentile Bootstrap UCL	43.68
95% BCA Bootstrap UCL	43.88		
90% Chebyshev(Mean, Sd) UCL	55.88	95% Chebyshev(Mean, Sd) UCL	66.78
97.5% Chebyshev(Mean, Sd) UCL	81.92	99% Chebyshev(Mean, Sd) UCL	111.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.7	Mean	59.97
Maximum	119	Median	62.05
SD	37.93	Std. Error of Mean	15.48
Coefficient of Variation	0.632	Skewness	0.462
Mean of logged Data	3.885	SD of logged Data	0.757

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	91.17	95% Adjusted-CLT UCL (Chen-1995)	88.56
		95% Modified-t UCL (Johnson-1978)	91.65

Nonparametric Distribution Free UCLs

95% CLT UCL	85.44	95% Jackknife UCL	91.17
95% Standard Bootstrap UCL	83.58	95% Bootstrap-t UCL	95.36
95% Hall's Bootstrap UCL	87.06	95% Percentile Bootstrap UCL	82.92
95% BCA Bootstrap UCL	84.57		
90% Chebyshev(Mean, Sd) UCL	106.4	95% Chebyshev(Mean, Sd) UCL	127.5
97.5% Chebyshev(Mean, Sd) UCL	156.7	99% Chebyshev(Mean, Sd) UCL	214

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.86	Mean	22.9
Maximum	43.9	Median	19.85
SD	16.18	Std. Error of Mean	6.605
Coefficient of Variation	0.706	Skewness	0.368
Mean of logged Data	2.873	SD of logged Data	0.831

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.21	95% Adjusted-CLT UCL (Chen-1995)	34.83
		95% Modified-t UCL (Johnson-1978)	36.38

Nonparametric Distribution Free UCLs

95% CLT UCL	33.77	95% Jackknife UCL	36.21
95% Standard Bootstrap UCL	32.84	95% Bootstrap-t UCL	38.01
95% Hall's Bootstrap UCL	34.35	95% Percentile Bootstrap UCL	33.09
95% BCA Bootstrap UCL	33.09		
90% Chebyshev(Mean, Sd) UCL	42.72	95% Chebyshev(Mean, Sd) UCL	51.69
97.5% Chebyshev(Mean, Sd) UCL	64.15	99% Chebyshev(Mean, Sd) UCL	88.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.04	Mean	15.53
Maximum	27.3	Median	14.9
SD	9.733	Std. Error of Mean	3.974
Coefficient of Variation	0.627	Skewness	0.126
Mean of logged Data	2.539	SD of logged Data	0.734

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.53	95% Adjusted-CLT UCL (Chen-1995)	22.28

		95% Modified-t UCL (Johnson-1978)	23.57

Nonparametric Distribution Free UCLs

95% CLT UCL	22.06	95% Jackknife UCL	23.53
95% Standard Bootstrap UCL	21.45	95% Bootstrap-t UCL	22.97
95% Hall's Bootstrap UCL	20.67	95% Percentile Bootstrap UCL	21.54
95% BCA Bootstrap UCL	21.88		
90% Chebyshev(Mean, Sd) UCL	27.45	95% Chebyshev(Mean, Sd) UCL	32.85
97.5% Chebyshev(Mean, Sd) UCL	40.34	99% Chebyshev(Mean, Sd) UCL	55.06

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.68	Mean	27.88
Maximum	48.4	Median	28.2
SD	16.85	Std. Error of Mean	6.88
Coefficient of Variation	0.604	Skewness	-0.0128
Mean of logged Data	3.126	SD of logged Data	0.747

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.74	95% Adjusted-CLT UCL (Chen-1995)	39.16
		95% Modified-t UCL (Johnson-1978)	41.74

Nonparametric Distribution Free UCLs

95% CLT UCL	39.2	95% Jackknife UCL	41.74
95% Standard Bootstrap UCL	38.25	95% Bootstrap-t UCL	41.63
95% Hall's Bootstrap UCL	36.86	95% Percentile Bootstrap UCL	37.73
95% BCA Bootstrap UCL	38.91		
90% Chebyshev(Mean, Sd) UCL	48.52	95% Chebyshev(Mean, Sd) UCL	57.87
97.5% Chebyshev(Mean, Sd) UCL	70.85	99% Chebyshev(Mean, Sd) UCL	96.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.6	Mean	6.511
Maximum	12.2	Median	5.33
SD	4.033	Std. Error of Mean	1.646
Coefficient of Variation	0.619	Skewness	0.58
Mean of logged Data	1.704	SD of logged Data	0.646

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.828	95% Adjusted-CLT UCL (Chen-1995)	9.635
		95% Modified-t UCL (Johnson-1978)	9.893

Nonparametric Distribution Free UCLs

95% CLT UCL	9.219	95% Jackknife UCL	9.828
95% Standard Bootstrap UCL	8.928	95% Bootstrap-t UCL	10.99
95% Hall's Bootstrap UCL	9.195	95% Percentile Bootstrap UCL	9.01
95% BCA Bootstrap UCL	9.214		
90% Chebyshev(Mean, Sd) UCL	11.45	95% Chebyshev(Mean, Sd) UCL	13.69
97.5% Chebyshev(Mean, Sd) UCL	16.79	99% Chebyshev(Mean, Sd) UCL	22.89

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.9	Mean	35.48
Maximum	63.2	Median	32.65
SD	22.84	Std. Error of Mean	9.325
Coefficient of Variation	0.644	Skewness	0.204
Mean of logged Data	3.358	SD of logged Data	0.746

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.27	95% Adjusted-CLT UCL (Chen-1995)	51.65
		95% Modified-t UCL (Johnson-1978)	54.4

Nonparametric Distribution Free UCLs

95% CLT UCL	50.82	95% Jackknife UCL	54.27
95% Standard Bootstrap UCL	49.71	95% Bootstrap-t UCL	53.04
95% Hall's Bootstrap UCL	48.41	95% Percentile Bootstrap UCL	49.77
95% BCA Bootstrap UCL	50.38		
90% Chebyshev(Mean, Sd) UCL	63.46	95% Chebyshev(Mean, Sd) UCL	76.13
97.5% Chebyshev(Mean, Sd) UCL	93.72	99% Chebyshev(Mean, Sd) UCL	128.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.904	Mean	1.211
Maximum	1.33	Median	1.253
SD	0.157	Std. Error of Mean	0.0641
Coefficient of Variation	0.13	Skewness	-2.003
Mean of logged Data	0.183	SD of logged Data	0.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.34	95% Adjusted-CLT UCL (Chen-1995)	1.26
		95% Modified-t UCL (Johnson-1978)	1.331

Nonparametric Distribution Free UCLs

95% CLT UCL	1.316	95% Jackknife UCL	1.34
95% Standard Bootstrap UCL	1.309	95% Bootstrap-t UCL	1.291
95% Hall's Bootstrap UCL	1.276	95% Percentile Bootstrap UCL	1.291
95% BCA Bootstrap UCL	1.281		
90% Chebyshev(Mean, Sd) UCL	1.403	95% Chebyshev(Mean, Sd) UCL	1.49
97.5% Chebyshev(Mean, Sd) UCL	1.611	99% Chebyshev(Mean, Sd) UCL	1.848

Suggested UCL to Use

95% Student's-t UCL	1.34	or 95% Modified-t UCL	1.331

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.84	Mean	27.14
Maximum	53.3	Median	22.8
SD	19.76	Std. Error of Mean	8.066
Coefficient of Variation	0.728	Skewness	0.427
Mean of logged Data	3.034	SD of logged Data	0.835

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.39	95% Adjusted-CLT UCL (Chen-1995)	41.91
		95% Modified-t UCL (Johnson-1978)	43.63

Nonparametric Distribution Free UCLs

95% CLT UCL	40.41	95% Jackknife UCL	43.39
95% Standard Bootstrap UCL	39.07	95% Bootstrap-t UCL	46.75
95% Hall's Bootstrap UCL	40.1	95% Percentile Bootstrap UCL	39.52
95% BCA Bootstrap UCL	40.93		
90% Chebyshev(Mean, Sd) UCL	51.34	95% Chebyshev(Mean, Sd) UCL	62.3
97.5% Chebyshev(Mean, Sd) UCL	77.51	99% Chebyshev(Mean, Sd) UCL	107.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.5	Mean	3.307
Maximum	5.02	Median	3.055
SD	0.918	Std. Error of Mean	0.375
Coefficient of Variation	0.277	Skewness	1.633
Mean of logged Data	1.168	SD of logged Data	0.251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.061	95% Adjusted-CLT UCL (Chen-1995)	4.19

		95% Modified-t UCL (Johnson-1978)	4.103

Nonparametric Distribution Free UCLs

95% CLT UCL	3.923	95% Jackknife UCL	4.061
95% Standard Bootstrap UCL	3.876	95% Bootstrap-t UCL	4.984
95% Hall's Bootstrap UCL	7.098	95% Percentile Bootstrap UCL	3.887
95% BCA Bootstrap UCL	4.05		
90% Chebyshev(Mean, Sd) UCL	4.43	95% Chebyshev(Mean, Sd) UCL	4.939
97.5% Chebyshev(Mean, Sd) UCL	5.646	99% Chebyshev(Mean, Sd) UCL	7.034

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.82	Mean	12.5
Maximum	21	Median	11.91
SD	7.315	Std. Error of Mean	2.986
Coefficient of Variation	0.585	Skewness	0.106
Mean of logged Data	2.348	SD of logged Data	0.691

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.51	95% Adjusted-CLT UCL (Chen-1995)	17.55
		95% Modified-t UCL (Johnson-1978)	18.54

Nonparametric Distribution Free UCLs

95% CLT UCL	17.41	95% Jackknife UCL	18.51
95% Standard Bootstrap UCL	17.05	95% Bootstrap-t UCL	20.17
95% Hall's Bootstrap UCL	17.11	95% Percentile Bootstrap UCL	16.82
95% BCA Bootstrap UCL	16.99		
90% Chebyshev(Mean, Sd) UCL	21.46	95% Chebyshev(Mean, Sd) UCL	25.51
97.5% Chebyshev(Mean, Sd) UCL	31.15	99% Chebyshev(Mean, Sd) UCL	42.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	36.12
Maximum	64.3	Median	34.65
SD	22.55	Std. Error of Mean	9.205
Coefficient of Variation	0.624	Skewness	0.142
Mean of logged Data	3.383	SD of logged Data	0.74

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.67	95% Adjusted-CLT UCL (Chen-1995)	51.83
		95% Modified-t UCL (Johnson-1978)	54.76

Nonparametric Distribution Free UCLs

95% CLT UCL	51.26	95% Jackknife UCL	54.67
95% Standard Bootstrap UCL	50.39	95% Bootstrap-t UCL	53.9
95% Hall's Bootstrap UCL	49.4	95% Percentile Bootstrap UCL	49.95
95% BCA Bootstrap UCL	49.33		
90% Chebyshev(Mean, Sd) UCL	63.73	95% Chebyshev(Mean, Sd) UCL	76.24
97.5% Chebyshev(Mean, Sd) UCL	93.6	99% Chebyshev(Mean, Sd) UCL	127.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:43:14 PM
From File	21063J.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	14.1	Mean	14.42
Maximum	14.8	Median	14.4
SD	0.299	Std. Error of Mean	0.122
Coefficient of Variation	0.0208	Skewness	0.163
Mean of logged Data	2.668	SD of logged Data	0.0208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.66	95% Adjusted-CLT UCL (Chen-1995)	14.63
		95% Modified-t UCL (Johnson-1978)	14.66

Nonparametric Distribution Free UCLs

95% CLT UCL	14.62	95% Jackknife UCL	14.66
95% Standard Bootstrap UCL	14.6	95% Bootstrap-t UCL	14.65
95% Hall's Bootstrap UCL	14.62	95% Percentile Bootstrap UCL	14.6
95% BCA Bootstrap UCL	14.6		
90% Chebyshev(Mean, Sd) UCL	14.78	95% Chebyshev(Mean, Sd) UCL	14.95
97.5% Chebyshev(Mean, Sd) UCL	15.18	99% Chebyshev(Mean, Sd) UCL	15.63

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.1	Mean	47.75
Maximum	102	Median	44
SD	33.22	Std. Error of Mean	13.56
Coefficient of Variation	0.696	Skewness	0.81
Mean of logged Data	3.644	SD of logged Data	0.75

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	75.08	95% Adjusted-CLT UCL (Chen-1995)	74.85
		95% Modified-t UCL (Johnson-1978)	75.83

Nonparametric Distribution Free UCLs

95% CLT UCL	70.06	95% Jackknife UCL	75.08
95% Standard Bootstrap UCL	67.91	95% Bootstrap-t UCL	85.67
95% Hall's Bootstrap UCL	70.85	95% Percentile Bootstrap UCL	68.57
95% BCA Bootstrap UCL	73.5		
90% Chebyshev(Mean, Sd) UCL	88.44	95% Chebyshev(Mean, Sd) UCL	106.9
97.5% Chebyshev(Mean, Sd) UCL	132.5	99% Chebyshev(Mean, Sd) UCL	182.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	47.1	Mean	48.9
Maximum	50.8	Median	48.45
SD	1.489	Std. Error of Mean	0.608
Coefficient of Variation	0.0304	Skewness	0.442
Mean of logged Data	3.889	SD of logged Data	0.0303

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.12	95% Adjusted-CLT UCL (Chen-1995)	50.02
		95% Modified-t UCL (Johnson-1978)	50.14

Nonparametric Distribution Free UCLs

95% CLT UCL	49.9	95% Jackknife UCL	50.12
95% Standard Bootstrap UCL	49.79	95% Bootstrap-t UCL	51.23
95% Hall's Bootstrap UCL	52.67	95% Percentile Bootstrap UCL	49.88
95% BCA Bootstrap UCL	49.9		
90% Chebyshev(Mean, Sd) UCL	50.72	95% Chebyshev(Mean, Sd) UCL	51.55
97.5% Chebyshev(Mean, Sd) UCL	52.7	99% Chebyshev(Mean, Sd) UCL	54.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.728	Mean	0.975
Maximum	1.2	Median	0.971
SD	0.187	Std. Error of Mean	0.0762
Coefficient of Variation	0.192	Skewness	-0.0527
Mean of logged Data	-0.0409	SD of logged Data	0.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.129	95% Adjusted-CLT UCL (Chen-1995)	1.099
		95% Modified-t UCL (Johnson-1978)	1.129

Nonparametric Distribution Free UCLs

95% CLT UCL	1.101	95% Jackknife UCL	1.129
95% Standard Bootstrap UCL	1.088	95% Bootstrap-t UCL	1.136
95% Hall's Bootstrap UCL	1.111	95% Percentile Bootstrap UCL	1.087
95% BCA Bootstrap UCL	1.084		
90% Chebyshev(Mean, Sd) UCL	1.204	95% Chebyshev(Mean, Sd) UCL	1.308
97.5% Chebyshev(Mean, Sd) UCL	1.451	99% Chebyshev(Mean, Sd) UCL	1.734

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.331	Mean	0.942
Maximum	1.52	Median	0.978
SD	0.554	Std. Error of Mean	0.226
Coefficient of Variation	0.588	Skewness	-0.0556
Mean of logged Data	-0.239	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.397	95% Adjusted-CLT UCL (Chen-1995)	1.308
		95% Modified-t UCL (Johnson-1978)	1.397

Nonparametric Distribution Free UCLs

95% CLT UCL	1.314	95% Jackknife UCL	1.397
95% Standard Bootstrap UCL	1.284	95% Bootstrap-t UCL	1.399
95% Hall's Bootstrap UCL	1.146	95% Percentile Bootstrap UCL	1.284
95% BCA Bootstrap UCL	1.274		
90% Chebyshev(Mean, Sd) UCL	1.62	95% Chebyshev(Mean, Sd) UCL	1.928
97.5% Chebyshev(Mean, Sd) UCL	2.354	99% Chebyshev(Mean, Sd) UCL	3.192

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.64	Mean	3.118
Maximum	4.52	Median	3.048
SD	1.326	Std. Error of Mean	0.541
Coefficient of Variation	0.425	Skewness	0.0147
Mean of logged Data	1.055	SD of logged Data	0.453

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.208	95% Adjusted-CLT UCL (Chen-1995)	4.011
		95% Modified-t UCL (Johnson-1978)	4.209

Nonparametric Distribution Free UCLs

95% CLT UCL	4.008	95% Jackknife UCL	4.208
95% Standard Bootstrap UCL	3.923	95% Bootstrap-t UCL	4.354
95% Hall's Bootstrap UCL	3.627	95% Percentile Bootstrap UCL	3.98
95% BCA Bootstrap UCL	3.918		
90% Chebyshev(Mean, Sd) UCL	4.741	95% Chebyshev(Mean, Sd) UCL	5.477
97.5% Chebyshev(Mean, Sd) UCL	6.498	99% Chebyshev(Mean, Sd) UCL	8.503

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.74	Mean	28.77
Maximum	49.1	Median	29.6
SD	18.96	Std. Error of Mean	7.742
Coefficient of Variation	0.659	Skewness	-6.638E-4
Mean of logged Data	3.13	SD of logged Data	0.778

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.37	95% Adjusted-CLT UCL (Chen-1995)	41.51
		95% Modified-t UCL (Johnson-1978)	44.37

Nonparametric Distribution Free UCLs

95% CLT UCL	41.51	95% Jackknife UCL	44.37
95% Standard Bootstrap UCL	40.73	95% Bootstrap-t UCL	44.88
95% Hall's Bootstrap UCL	35.42	95% Percentile Bootstrap UCL	40.25
95% BCA Bootstrap UCL	41.03		
90% Chebyshev(Mean, Sd) UCL	52	95% Chebyshev(Mean, Sd) UCL	62.52
97.5% Chebyshev(Mean, Sd) UCL	77.12	99% Chebyshev(Mean, Sd) UCL	105.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.2	Mean	41.67
Maximum	70.2	Median	42.35
SD	27.95	Std. Error of Mean	11.41
Coefficient of Variation	0.671	Skewness	-0.00291
Mean of logged Data	3.491	SD of logged Data	0.791

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.66	95% Adjusted-CLT UCL (Chen-1995)	60.42
		95% Modified-t UCL (Johnson-1978)	64.66

Nonparametric Distribution Free UCLs

95% CLT UCL	60.43	95% Jackknife UCL	64.66
95% Standard Bootstrap UCL	58.44	95% Bootstrap-t UCL	65.35
95% Hall's Bootstrap UCL	51.17	95% Percentile Bootstrap UCL	58.87
95% BCA Bootstrap UCL	59.35		
90% Chebyshev(Mean, Sd) UCL	75.9	95% Chebyshev(Mean, Sd) UCL	91.4
97.5% Chebyshev(Mean, Sd) UCL	112.9	99% Chebyshev(Mean, Sd) UCL	155.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.4	Mean	53.28
Maximum	91.2	Median	53.9
SD	35.6	Std. Error of Mean	14.54
Coefficient of Variation	0.668	Skewness	0.00975
Mean of logged Data	3.74	SD of logged Data	0.786

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	82.57	95% Adjusted-CLT UCL (Chen-1995)	77.25
		95% Modified-t UCL (Johnson-1978)	82.58

Nonparametric Distribution Free UCLs

95% CLT UCL	77.19	95% Jackknife UCL	82.57
95% Standard Bootstrap UCL	75.39	95% Bootstrap-t UCL	84.18
95% Hall's Bootstrap UCL	65.55	95% Percentile Bootstrap UCL	74.98
95% BCA Bootstrap UCL	75.97		
90% Chebyshev(Mean, Sd) UCL	96.89	95% Chebyshev(Mean, Sd) UCL	116.6
97.5% Chebyshev(Mean, Sd) UCL	144.1	99% Chebyshev(Mean, Sd) UCL	197.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.34	Mean	27.63
Maximum	48.1	Median	27.45
SD	18.74	Std. Error of Mean	7.65
Coefficient of Variation	0.678	Skewness	0.0292
Mean of logged Data	3.076	SD of logged Data	0.798

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.05	95% Adjusted-CLT UCL (Chen-1995)	40.31
		95% Modified-t UCL (Johnson-1978)	43.06

Nonparametric Distribution Free UCLs

95% CLT UCL	40.22	95% Jackknife UCL	43.05
95% Standard Bootstrap UCL	39.35	95% Bootstrap-t UCL	43.75
95% Hall's Bootstrap UCL	34.13	95% Percentile Bootstrap UCL	39.17
95% BCA Bootstrap UCL	39.38		
90% Chebyshev(Mean, Sd) UCL	50.58	95% Chebyshev(Mean, Sd) UCL	60.98
97.5% Chebyshev(Mean, Sd) UCL	75.41	99% Chebyshev(Mean, Sd) UCL	103.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.53	Mean	20.76
Maximum	35.7	Median	21.3
SD	14.18	Std. Error of Mean	5.789
Coefficient of Variation	0.683	Skewness	-0.00595
Mean of logged Data	2.78	SD of logged Data	0.819

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.42	95% Adjusted-CLT UCL (Chen-1995)	30.26
		95% Modified-t UCL (Johnson-1978)	32.42

Nonparametric Distribution Free UCLs

95% CLT UCL	30.28	95% Jackknife UCL	32.42
95% Standard Bootstrap UCL	29.52	95% Bootstrap-t UCL	32.92
95% Hall's Bootstrap UCL	25.69	95% Percentile Bootstrap UCL	29.45
95% BCA Bootstrap UCL	29.37		
90% Chebyshev(Mean, Sd) UCL	38.12	95% Chebyshev(Mean, Sd) UCL	45.99
97.5% Chebyshev(Mean, Sd) UCL	56.91	99% Chebyshev(Mean, Sd) UCL	78.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.5	Mean	38.5
Maximum	65.8	Median	39.25
SD	25.32	Std. Error of Mean	10.34
Coefficient of Variation	0.658	Skewness	0.0116
Mean of logged Data	3.424	SD of logged Data	0.77

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.33	95% Adjusted-CLT UCL (Chen-1995)	55.55
		95% Modified-t UCL (Johnson-1978)	59.34

Nonparametric Distribution Free UCLs

95% CLT UCL	55.5	95% Jackknife UCL	59.33
95% Standard Bootstrap UCL	53.94	95% Bootstrap-t UCL	60.22
95% Hall's Bootstrap UCL	47.28	95% Percentile Bootstrap UCL	53.88
95% BCA Bootstrap UCL	53.87		
90% Chebyshev(Mean, Sd) UCL	69.51	95% Chebyshev(Mean, Sd) UCL	83.56
97.5% Chebyshev(Mean, Sd) UCL	103.1	99% Chebyshev(Mean, Sd) UCL	141.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.45	Mean	7.318
Maximum	12.5	Median	7.3
SD	4.906	Std. Error of Mean	2.003
Coefficient of Variation	0.67	Skewness	0.0132
Mean of logged Data	1.753	SD of logged Data	0.789

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.35	95% Adjusted-CLT UCL (Chen-1995)	10.62
		95% Modified-t UCL (Johnson-1978)	11.36

Nonparametric Distribution Free UCLs

95% CLT UCL	10.61	95% Jackknife UCL	11.35
95% Standard Bootstrap UCL	10.31	95% Bootstrap-t UCL	11.43
95% Hall's Bootstrap UCL	8.997	95% Percentile Bootstrap UCL	10.36
95% BCA Bootstrap UCL	10.27		
90% Chebyshev(Mean, Sd) UCL	13.33	95% Chebyshev(Mean, Sd) UCL	16.05
97.5% Chebyshev(Mean, Sd) UCL	19.83	99% Chebyshev(Mean, Sd) UCL	27.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.7	Mean	50.67
Maximum	85.9	Median	51.25
SD	32.95	Std. Error of Mean	13.45
Coefficient of Variation	0.65	Skewness	-0.00306
Mean of logged Data	3.702	SD of logged Data	0.768

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	77.77	95% Adjusted-CLT UCL (Chen-1995)	72.77
		95% Modified-t UCL (Johnson-1978)	77.77

Nonparametric Distribution Free UCLs

95% CLT UCL	72.79	95% Jackknife UCL	77.77
95% Standard Bootstrap UCL	70.65	95% Bootstrap-t UCL	78.81
95% Hall's Bootstrap UCL	62.48	95% Percentile Bootstrap UCL	71
95% BCA Bootstrap UCL	71.5		
90% Chebyshev(Mean, Sd) UCL	91.02	95% Chebyshev(Mean, Sd) UCL	109.3
97.5% Chebyshev(Mean, Sd) UCL	134.7	99% Chebyshev(Mean, Sd) UCL	184.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.185	Mean	1.223
Maximum	1.305	Median	1.2
SD	0.0452	Std. Error of Mean	0.0185
Coefficient of Variation	0.037	Skewness	1.574
Mean of logged Data	0.2	SD of logged Data	0.0363

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.26	95% Adjusted-CLT UCL (Chen-1995)	1.266
		95% Modified-t UCL (Johnson-1978)	1.262

Nonparametric Distribution Free UCLs

95% CLT UCL	1.253	95% Jackknife UCL	1.26
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.278	95% Chebyshev(Mean, Sd) UCL	1.303
97.5% Chebyshev(Mean, Sd) UCL	1.338	99% Chebyshev(Mean, Sd) UCL	1.406

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.4	Mean	31.1
Maximum	54.9	Median	29.8
SD	21.55	Std. Error of Mean	8.797
Coefficient of Variation	0.693	Skewness	0.0624
Mean of logged Data	3.183	SD of logged Data	0.818

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.83	95% Adjusted-CLT UCL (Chen-1995)	45.81
		95% Modified-t UCL (Johnson-1978)	48.86

Nonparametric Distribution Free UCLs

95% CLT UCL	45.57	95% Jackknife UCL	48.83
95% Standard Bootstrap UCL	44.49	95% Bootstrap-t UCL	49.02
95% Hall's Bootstrap UCL	38.72	95% Percentile Bootstrap UCL	44.35
95% BCA Bootstrap UCL	44.35		
90% Chebyshev(Mean, Sd) UCL	57.49	95% Chebyshev(Mean, Sd) UCL	69.44
97.5% Chebyshev(Mean, Sd) UCL	86.04	99% Chebyshev(Mean, Sd) UCL	118.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.13	Mean	2.527
Maximum	2.92	Median	2.545
SD	0.322	Std. Error of Mean	0.131
Coefficient of Variation	0.127	Skewness	-0.106
Mean of logged Data	0.92	SD of logged Data	0.129

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.792	95% Adjusted-CLT UCL (Chen-1995)	2.737
		95% Modified-t UCL (Johnson-1978)	2.791

Nonparametric Distribution Free UCLs

95% CLT UCL	2.743	95% Jackknife UCL	2.792
95% Standard Bootstrap UCL	2.724	95% Bootstrap-t UCL	2.772
95% Hall's Bootstrap UCL	2.765	95% Percentile Bootstrap UCL	2.715
95% BCA Bootstrap UCL	2.71		
90% Chebyshev(Mean, Sd) UCL	2.921	95% Chebyshev(Mean, Sd) UCL	3.1
97.5% Chebyshev(Mean, Sd) UCL	3.348	99% Chebyshev(Mean, Sd) UCL	3.835

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.05	Mean	17.88
Maximum	29.3	Median	18.3
SD	11.21	Std. Error of Mean	4.577
Coefficient of Variation	0.627	Skewness	-0.0364
Mean of logged Data	2.676	SD of logged Data	0.741

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.1	95% Adjusted-CLT UCL (Chen-1995)	25.34
		95% Modified-t UCL (Johnson-1978)	27.09

Nonparametric Distribution Free UCLs

95% CLT UCL	25.41	95% Jackknife UCL	27.1
95% Standard Bootstrap UCL	24.8	95% Bootstrap-t UCL	27.11
95% Hall's Bootstrap UCL	22.13	95% Percentile Bootstrap UCL	24.76
95% BCA Bootstrap UCL	24.76		
90% Chebyshev(Mean, Sd) UCL	31.61	95% Chebyshev(Mean, Sd) UCL	37.83
97.5% Chebyshev(Mean, Sd) UCL	46.46	99% Chebyshev(Mean, Sd) UCL	63.42

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17	Mean	50.65
Maximum	86.1	Median	51.3
SD	33.2	Std. Error of Mean	13.55
Coefficient of Variation	0.655	Skewness	6.0732E-4
Mean of logged Data	3.698	SD of logged Data	0.772

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	77.96	95% Adjusted-CLT UCL (Chen-1995)	72.94
		95% Modified-t UCL (Johnson-1978)	77.96

Nonparametric Distribution Free UCLs

95% CLT UCL	72.94	95% Jackknife UCL	77.96
95% Standard Bootstrap UCL	70.9	95% Bootstrap-t UCL	78.89
95% Hall's Bootstrap UCL	62.39	95% Percentile Bootstrap UCL	70.82
95% BCA Bootstrap UCL	71.05		
90% Chebyshev(Mean, Sd) UCL	91.31	95% Chebyshev(Mean, Sd) UCL	109.7
97.5% Chebyshev(Mean, Sd) UCL	135.3	99% Chebyshev(Mean, Sd) UCL	185.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:44:34 PM
From File	21063K.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	15.83
Maximum	16.8	Median	16.2
SD	1.194	Std. Error of Mean	0.488
Coefficient of Variation	0.0754	Skewness	-1.661
Mean of logged Data	2.76	SD of logged Data	0.079

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.82	95% Adjusted-CLT UCL (Chen-1995)	16.28
		95% Modified-t UCL (Johnson-1978)	16.76

Nonparametric Distribution Free UCLs

95% CLT UCL	16.64	95% Jackknife UCL	16.82
95% Standard Bootstrap UCL	16.58	95% Bootstrap-t UCL	16.49
95% Hall's Bootstrap UCL	16.35	95% Percentile Bootstrap UCL	16.48
95% BCA Bootstrap UCL	16.37		
90% Chebyshev(Mean, Sd) UCL	17.3	95% Chebyshev(Mean, Sd) UCL	17.96
97.5% Chebyshev(Mean, Sd) UCL	18.88	99% Chebyshev(Mean, Sd) UCL	20.69

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	22	Mean	75.65
Maximum	132	Median	85.25
SD	46.39	Std. Error of Mean	18.94
Coefficient of Variation	0.613	Skewness	-0.221

Mean of logged Data	4.1	SD of logged Data	0.806

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	113.8	95% Adjusted-CLT UCL (Chen-1995)	105
		95% Modified-t UCL (Johnson-1978)	113.5

Nonparametric Distribution Free UCLs

95% CLT UCL	106.8	95% Jackknife UCL	113.8
95% Standard Bootstrap UCL	104.5	95% Bootstrap-t UCL	112
95% Hall's Bootstrap UCL	98.46	95% Percentile Bootstrap UCL	104.4
95% BCA Bootstrap UCL	100.8		
90% Chebyshev(Mean, Sd) UCL	132.5	95% Chebyshev(Mean, Sd) UCL	158.2
97.5% Chebyshev(Mean, Sd) UCL	193.9	99% Chebyshev(Mean, Sd) UCL	264.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.8	Mean	52.5
Maximum	57	Median	53.2
SD	4.59	Std. Error of Mean	1.874
Coefficient of Variation	0.0874	Skewness	-0.471
Mean of logged Data	3.958	SD of logged Data	0.089

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.28	95% Adjusted-CLT UCL (Chen-1995)	55.2
		95% Modified-t UCL (Johnson-1978)	56.22

Nonparametric Distribution Free UCLs

95% CLT UCL	55.58	95% Jackknife UCL	56.28
95% Standard Bootstrap UCL	55.34	95% Bootstrap-t UCL	55.87
95% Hall's Bootstrap UCL	54.65	95% Percentile Bootstrap UCL	55.27
95% BCA Bootstrap UCL	55.03		

90% Chebyshev(Mean, Sd) UCL	58.12	95% Chebyshev(Mean, Sd) UCL	60.67
97.5% Chebyshev(Mean, Sd) UCL	64.2	99% Chebyshev(Mean, Sd) UCL	71.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.807	Mean	1.109
Maximum	1.41	Median	1.087
SD	0.271	Std. Error of Mean	0.111
Coefficient of Variation	0.245	Skewness	0.102
Mean of logged Data	0.0783	SD of logged Data	0.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.332	95% Adjusted-CLT UCL (Chen-1995)	1.296
		95% Modified-t UCL (Johnson-1978)	1.333

Nonparametric Distribution Free UCLs

95% CLT UCL	1.291	95% Jackknife UCL	1.332
95% Standard Bootstrap UCL	1.272	95% Bootstrap-t UCL	1.383
95% Hall's Bootstrap UCL	1.244	95% Percentile Bootstrap UCL	1.278
95% BCA Bootstrap UCL	1.275		
90% Chebyshev(Mean, Sd) UCL	1.442	95% Chebyshev(Mean, Sd) UCL	1.592
97.5% Chebyshev(Mean, Sd) UCL	1.801	99% Chebyshev(Mean, Sd) UCL	2.211

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.41	Mean	0.748
Maximum	1.08	Median	0.753

SD	0.334	Std. Error of Mean	0.136
Coefficient of Variation	0.446	Skewness	-0.0106
Mean of logged Data	-0.382	SD of logged Data	0.477

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.022	95% Adjusted-CLT UCL (Chen-1995)	0.971
		95% Modified-t UCL (Johnson-1978)	1.022

Nonparametric Distribution Free UCLs

95% CLT UCL	0.972	95% Jackknife UCL	1.022
95% Standard Bootstrap UCL	0.954	95% Bootstrap-t UCL	1.018
95% Hall's Bootstrap UCL	0.866	95% Percentile Bootstrap UCL	0.954
95% BCA Bootstrap UCL	0.956		
90% Chebyshev(Mean, Sd) UCL	1.157	95% Chebyshev(Mean, Sd) UCL	1.342
97.5% Chebyshev(Mean, Sd) UCL	1.598	99% Chebyshev(Mean, Sd) UCL	2.103

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	2.417
Maximum	2.93	Median	2.373
SD	0.442	Std. Error of Mean	0.18
Coefficient of Variation	0.183	Skewness	0.104
Mean of logged Data	0.868	SD of logged Data	0.184

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.78	95% Adjusted-CLT UCL (Chen-1995)	2.722
		95% Modified-t UCL (Johnson-1978)	2.781

Nonparametric Distribution Free UCLs

95% CLT UCL	2.713	95% Jackknife UCL	2.78
95% Standard Bootstrap UCL	2.689	95% Bootstrap-t UCL	2.783

95% Hall's Bootstrap UCL	2.575	95% Percentile Bootstrap UCL	2.694
95% BCA Bootstrap UCL	2.689		
90% Chebyshev(Mean, Sd) UCL	2.958	95% Chebyshev(Mean, Sd) UCL	3.203
97.5% Chebyshev(Mean, Sd) UCL	3.543	99% Chebyshev(Mean, Sd) UCL	4.212

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.64	Mean	20.73
Maximum	33.1	Median	22.5
SD	12.57	Std. Error of Mean	5.131
Coefficient of Variation	0.606	Skewness	-0.224
Mean of logged Data	2.812	SD of logged Data	0.798

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.07	95% Adjusted-CLT UCL (Chen-1995)	28.67
		95% Modified-t UCL (Johnson-1978)	30.99

Nonparametric Distribution Free UCLs

95% CLT UCL	29.17	95% Jackknife UCL	31.07
95% Standard Bootstrap UCL	28.42	95% Bootstrap-t UCL	30.68
95% Hall's Bootstrap UCL	25.95	95% Percentile Bootstrap UCL	28.37
95% BCA Bootstrap UCL	27.97		
90% Chebyshev(Mean, Sd) UCL	36.12	95% Chebyshev(Mean, Sd) UCL	43.09
97.5% Chebyshev(Mean, Sd) UCL	52.77	99% Chebyshev(Mean, Sd) UCL	71.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	7.08	Mean	29.91
Maximum	50.1	Median	31.2
SD	19.15	Std. Error of Mean	7.817
Coefficient of Variation	0.64	Skewness	-0.09
Mean of logged Data	3.165	SD of logged Data	0.807

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.66	95% Adjusted-CLT UCL (Chen-1995)	42.46
		95% Modified-t UCL (Johnson-1978)	45.62

Nonparametric Distribution Free UCLs

95% CLT UCL	42.77	95% Jackknife UCL	45.66
95% Standard Bootstrap UCL	41.38	95% Bootstrap-t UCL	45.67
95% Hall's Bootstrap UCL	37.35	95% Percentile Bootstrap UCL	41.63
95% BCA Bootstrap UCL	41.58		
90% Chebyshev(Mean, Sd) UCL	53.36	95% Chebyshev(Mean, Sd) UCL	63.99
97.5% Chebyshev(Mean, Sd) UCL	78.73	99% Chebyshev(Mean, Sd) UCL	107.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.21	Mean	39.5
Maximum	60.6	Median	42.2
SD	23.5	Std. Error of Mean	9.595
Coefficient of Variation	0.595	Skewness	-0.207
Mean of logged Data	3.469	SD of logged Data	0.771

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.84	95% Adjusted-CLT UCL (Chen-1995)	54.42
		95% Modified-t UCL (Johnson-1978)	58.7

Nonparametric Distribution Free UCLs

95% CLT UCL	55.28	95% Jackknife UCL	58.84
95% Standard Bootstrap UCL	53.8	95% Bootstrap-t UCL	57.71
95% Hall's Bootstrap UCL	49.2	95% Percentile Bootstrap UCL	54.15
95% BCA Bootstrap UCL	54.07		
90% Chebyshev(Mean, Sd) UCL	68.29	95% Chebyshev(Mean, Sd) UCL	81.33
97.5% Chebyshev(Mean, Sd) UCL	99.42	99% Chebyshev(Mean, Sd) UCL	135

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.7	Mean	20.87
Maximum	32	Median	23.4
SD	12.04	Std. Error of Mean	4.914
Coefficient of Variation	0.577	Skewness	-0.35
Mean of logged Data	2.833	SD of logged Data	0.778

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.77	95% Adjusted-CLT UCL (Chen-1995)	28.2
		95% Modified-t UCL (Johnson-1978)	30.65

Nonparametric Distribution Free UCLs

95% CLT UCL	28.95	95% Jackknife UCL	30.77
95% Standard Bootstrap UCL	28.38	95% Bootstrap-t UCL	30.18
95% Hall's Bootstrap UCL	26.13	95% Percentile Bootstrap UCL	28.57
95% BCA Bootstrap UCL	27.85		
90% Chebyshev(Mean, Sd) UCL	35.61	95% Chebyshev(Mean, Sd) UCL	42.29
97.5% Chebyshev(Mean, Sd) UCL	51.55	99% Chebyshev(Mean, Sd) UCL	69.76

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.41	Mean	15.83
Maximum	24.1	Median	18.4
SD	8.803	Std. Error of Mean	3.594
Coefficient of Variation	0.556	Skewness	-0.567
Mean of logged Data	2.558	SD of logged Data	0.789

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.07	95% Adjusted-CLT UCL (Chen-1995)	20.85
		95% Modified-t UCL (Johnson-1978)	22.93

Nonparametric Distribution Free UCLs

95% CLT UCL	21.74	95% Jackknife UCL	23.07
95% Standard Bootstrap UCL	21.31	95% Bootstrap-t UCL	21.78
95% Hall's Bootstrap UCL	19.89	95% Percentile Bootstrap UCL	20.82
95% BCA Bootstrap UCL	20.88		
90% Chebyshev(Mean, Sd) UCL	26.61	95% Chebyshev(Mean, Sd) UCL	31.49
97.5% Chebyshev(Mean, Sd) UCL	38.27	99% Chebyshev(Mean, Sd) UCL	51.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.105	Mean	20.95
Maximum	42.6	Median	16.65
SD	17.15	Std. Error of Mean	7
Coefficient of Variation	0.818	Skewness	0.501
Mean of logged Data	2.621	SD of logged Data	1.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.05	95% Adjusted-CLT UCL (Chen-1995)	33.99
		95% Modified-t UCL (Johnson-1978)	35.29

Nonparametric Distribution Free UCLs

95% CLT UCL	32.46	95% Jackknife UCL	35.05
95% Standard Bootstrap UCL	31.58	95% Bootstrap-t UCL	48.67
95% Hall's Bootstrap UCL	61.69	95% Percentile Bootstrap UCL	31.72
95% BCA Bootstrap UCL	32.7		
90% Chebyshev(Mean, Sd) UCL	41.95	95% Chebyshev(Mean, Sd) UCL	51.46
97.5% Chebyshev(Mean, Sd) UCL	64.66	99% Chebyshev(Mean, Sd) UCL	90.59

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.39	Mean	6.761
Maximum	10.5	Median	7.91
SD	3.241	Std. Error of Mean	1.323
Coefficient of Variation	0.479	Skewness	-0.59
Mean of logged Data	1.779	SD of logged Data	0.61

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.427	95% Adjusted-CLT UCL (Chen-1995)	8.597
		95% Modified-t UCL (Johnson-1978)	9.374

Nonparametric Distribution Free UCLs

95% CLT UCL	8.937	95% Jackknife UCL	9.427
95% Standard Bootstrap UCL	8.759	95% Bootstrap-t UCL	9.131
95% Hall's Bootstrap UCL	8.275	95% Percentile Bootstrap UCL	8.732
95% BCA Bootstrap UCL	8.388		
90% Chebyshev(Mean, Sd) UCL	10.73	95% Chebyshev(Mean, Sd) UCL	12.53
97.5% Chebyshev(Mean, Sd) UCL	15.02	99% Chebyshev(Mean, Sd) UCL	19.93

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.76	Mean	33.26
Maximum	56.2	Median	33.35
SD	23.06	Std. Error of Mean	9.413
Coefficient of Variation	0.693	Skewness	-0.0343
Mean of logged Data	3.233	SD of logged Data	0.863

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.23	95% Adjusted-CLT UCL (Chen-1995)	48.6
		95% Modified-t UCL (Johnson-1978)	52.21

Nonparametric Distribution Free UCLs

95% CLT UCL	48.74	95% Jackknife UCL	52.23
95% Standard Bootstrap UCL	47.35	95% Bootstrap-t UCL	51.75
95% Hall's Bootstrap UCL	41.43	95% Percentile Bootstrap UCL	47.34
95% BCA Bootstrap UCL	46.88		
90% Chebyshev(Mean, Sd) UCL	61.5	95% Chebyshev(Mean, Sd) UCL	74.29
97.5% Chebyshev(Mean, Sd) UCL	92.05	99% Chebyshev(Mean, Sd) UCL	126.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.215	Mean	1.279
Maximum	1.325	Median	1.285
SD	0.0429	Std. Error of Mean	0.0175
Coefficient of Variation	0.0336	Skewness	-0.501
Mean of logged Data	0.246	SD of logged Data	0.0338

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.314	95% Adjusted-CLT UCL (Chen-1995)	1.304
		95% Modified-t UCL (Johnson-1978)	1.314

Nonparametric Distribution Free UCLs

95% CLT UCL	1.308	95% Jackknife UCL	1.314
95% Standard Bootstrap UCL	1.305	95% Bootstrap-t UCL	1.313
95% Hall's Bootstrap UCL	1.301	95% Percentile Bootstrap UCL	1.305
95% BCA Bootstrap UCL	1.303		
90% Chebyshev(Mean, Sd) UCL	1.332	95% Chebyshev(Mean, Sd) UCL	1.356
97.5% Chebyshev(Mean, Sd) UCL	1.389	99% Chebyshev(Mean, Sd) UCL	1.454

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.08	Mean	23.58
Maximum	37.6	Median	25.5
SD	14.04	Std. Error of Mean	5.73
Coefficient of Variation	0.595	Skewness	-0.272
Mean of logged Data	2.943	SD of logged Data	0.801

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.13	95% Adjusted-CLT UCL (Chen-1995)	32.32
		95% Modified-t UCL (Johnson-1978)	35.02

Nonparametric Distribution Free UCLs

95% CLT UCL	33.01	95% Jackknife UCL	35.13
95% Standard Bootstrap UCL	32.03	95% Bootstrap-t UCL	34.54
95% Hall's Bootstrap UCL	29.85	95% Percentile Bootstrap UCL	31.93
95% BCA Bootstrap UCL	31.7		
90% Chebyshev(Mean, Sd) UCL	40.77	95% Chebyshev(Mean, Sd) UCL	48.56
97.5% Chebyshev(Mean, Sd) UCL	59.37	99% Chebyshev(Mean, Sd) UCL	80.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.09	Mean	2.757
Maximum	3.37	Median	2.755
SD	0.562	Std. Error of Mean	0.23
Coefficient of Variation	0.204	Skewness	-0.0541
Mean of logged Data	0.996	SD of logged Data	0.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.219	95% Adjusted-CLT UCL (Chen-1995)	3.129
		95% Modified-t UCL (Johnson-1978)	3.218

Nonparametric Distribution Free UCLs

95% CLT UCL	3.134	95% Jackknife UCL	3.219
95% Standard Bootstrap UCL	3.103	95% Bootstrap-t UCL	3.243
95% Hall's Bootstrap UCL	2.978	95% Percentile Bootstrap UCL	3.108
95% BCA Bootstrap UCL	3.092		
90% Chebyshev(Mean, Sd) UCL	3.445	95% Chebyshev(Mean, Sd) UCL	3.757
97.5% Chebyshev(Mean, Sd) UCL	4.19	99% Chebyshev(Mean, Sd) UCL	5.041

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.78	Mean	11.44
Maximum	19.3	Median	11.74
SD	7.881	Std. Error of Mean	3.217
Coefficient of Variation	0.689	Skewness	-0.042
Mean of logged Data	2.169	SD of logged Data	0.856

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.92	95% Adjusted-CLT UCL (Chen-1995)	16.67
		95% Modified-t UCL (Johnson-1978)	17.91

Nonparametric Distribution Free UCLs

95% CLT UCL	16.73	95% Jackknife UCL	17.92
95% Standard Bootstrap UCL	16.37	95% Bootstrap-t UCL	17.92
95% Hall's Bootstrap UCL	14.21	95% Percentile Bootstrap UCL	16.35
95% BCA Bootstrap UCL	16.35		
90% Chebyshev(Mean, Sd) UCL	21.09	95% Chebyshev(Mean, Sd) UCL	25.46
97.5% Chebyshev(Mean, Sd) UCL	31.53	99% Chebyshev(Mean, Sd) UCL	43.45

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.05	Mean	33.71
Maximum	56.5	Median	34
SD	23.07	Std. Error of Mean	9.416
Coefficient of Variation	0.684	Skewness	-0.0432
Mean of logged Data	3.255	SD of logged Data	0.849

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.68	95% Adjusted-CLT UCL (Chen-1995)	49.02
		95% Modified-t UCL (Johnson-1978)	52.66

Nonparametric Distribution Free UCLs

95% CLT UCL	49.2	95% Jackknife UCL	52.68
95% Standard Bootstrap UCL	47.83	95% Bootstrap-t UCL	52.53
95% Hall's Bootstrap UCL	41.85	95% Percentile Bootstrap UCL	47.73
95% BCA Bootstrap UCL	47.7		
90% Chebyshev(Mean, Sd) UCL	61.96	95% Chebyshev(Mean, Sd) UCL	74.75
97.5% Chebyshev(Mean, Sd) UCL	92.51	99% Chebyshev(Mean, Sd) UCL	127.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:36:50 AM
From File	21078A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.8	Mean	12.97
Maximum	14.6	Median	12.7
SD	1.023	Std. Error of Mean	0.418
Coefficient of Variation	0.0789	Skewness	0.775
Mean of logged Data	2.56	SD of logged Data	0.0776

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.81	95% Adjusted-CLT UCL (Chen-1995)	13.79
		95% Modified-t UCL (Johnson-1978)	13.83

Nonparametric Distribution Free UCLs

95% CLT UCL	13.65	95% Jackknife UCL	13.81
95% Standard Bootstrap UCL	13.59	95% Bootstrap-t UCL	14.53
95% Hall's Bootstrap UCL	18.5	95% Percentile Bootstrap UCL	13.63
95% BCA Bootstrap UCL	13.63		
90% Chebyshev(Mean, Sd) UCL	14.22	95% Chebyshev(Mean, Sd) UCL	14.79
97.5% Chebyshev(Mean, Sd) UCL	15.57	99% Chebyshev(Mean, Sd) UCL	17.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.2	Mean	62.25
Maximum	129	Median	56.75
SD	40.49	Std. Error of Mean	16.53
Coefficient of Variation	0.65	Skewness	0.811
Mean of logged Data	3.933	SD of logged Data	0.72

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	95.56	95% Adjusted-CLT UCL (Chen-1995)	95.29
		95% Modified-t UCL (Johnson-1978)	96.47

Nonparametric Distribution Free UCLs

95% CLT UCL	89.44	95% Jackknife UCL	95.56
95% Standard Bootstrap UCL	87.39	95% Bootstrap-t UCL	109.4
95% Hall's Bootstrap UCL	94.79	95% Percentile Bootstrap UCL	88.28
95% BCA Bootstrap UCL	92.92		
90% Chebyshev(Mean, Sd) UCL	111.8	95% Chebyshev(Mean, Sd) UCL	134.3
97.5% Chebyshev(Mean, Sd) UCL	165.5	99% Chebyshev(Mean, Sd) UCL	226.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.7	Mean	46.3
Maximum	50.1	Median	46.45
SD	2.721	Std. Error of Mean	1.111
Coefficient of Variation	0.0588	Skewness	-0.618
Mean of logged Data	3.834	SD of logged Data	0.0597

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.54	95% Adjusted-CLT UCL (Chen-1995)	47.83
		95% Modified-t UCL (Johnson-1978)	48.49

Nonparametric Distribution Free UCLs

95% CLT UCL	48.13	95% Jackknife UCL	48.54
95% Standard Bootstrap UCL	47.96	95% Bootstrap-t UCL	48.08
95% Hall's Bootstrap UCL	48.08	95% Percentile Bootstrap UCL	47.95
95% BCA Bootstrap UCL	47.73		
90% Chebyshev(Mean, Sd) UCL	49.63	95% Chebyshev(Mean, Sd) UCL	51.14
97.5% Chebyshev(Mean, Sd) UCL	53.24	99% Chebyshev(Mean, Sd) UCL	57.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.649	Mean	0.989
Maximum	1.71	Median	0.938
SD	0.379	Std. Error of Mean	0.155
Coefficient of Variation	0.383	Skewness	1.728
Mean of logged Data	-0.0627	SD of logged Data	0.339

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.301	95% Adjusted-CLT UCL (Chen-1995)	1.36
		95% Modified-t UCL (Johnson-1978)	1.319

Nonparametric Distribution Free UCLs

95% CLT UCL	1.244	95% Jackknife UCL	1.301
95% Standard Bootstrap UCL	1.22	95% Bootstrap-t UCL	1.509
95% Hall's Bootstrap UCL	2.362	95% Percentile Bootstrap UCL	1.236
95% BCA Bootstrap UCL	1.318		
90% Chebyshev(Mean, Sd) UCL	1.454	95% Chebyshev(Mean, Sd) UCL	1.664
97.5% Chebyshev(Mean, Sd) UCL	1.956	99% Chebyshev(Mean, Sd) UCL	2.529

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.385	Mean	1.315
Maximum	4.55	Median	0.71
SD	1.606	Std. Error of Mean	0.656
Coefficient of Variation	1.222	Skewness	2.311
Mean of logged Data	-0.146	SD of logged Data	0.899

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.636	95% Adjusted-CLT UCL (Chen-1995)	3.054
		95% Modified-t UCL (Johnson-1978)	2.739

Nonparametric Distribution Free UCLs

95% CLT UCL	2.393	95% Jackknife UCL	2.636
95% Standard Bootstrap UCL	2.311	95% Bootstrap-t UCL	6.439
95% Hall's Bootstrap UCL	7.47	95% Percentile Bootstrap UCL	2.53
95% BCA Bootstrap UCL	2.713		
90% Chebyshev(Mean, Sd) UCL	3.281	95% Chebyshev(Mean, Sd) UCL	4.172
97.5% Chebyshev(Mean, Sd) UCL	5.409	99% Chebyshev(Mean, Sd) UCL	7.838

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.3	Mean	4.13
Maximum	12.7	Median	2.65
SD	4.266	Std. Error of Mean	1.742
Coefficient of Variation	1.033	Skewness	2.277
Mean of logged Data	1.113	SD of logged Data	0.779

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.64	95% Adjusted-CLT UCL (Chen-1995)	8.725
		95% Modified-t UCL (Johnson-1978)	7.909

Nonparametric Distribution Free UCLs

95% CLT UCL	6.995	95% Jackknife UCL	7.64
95% Standard Bootstrap UCL	6.791	95% Bootstrap-t UCL	17.13
95% Hall's Bootstrap UCL	20.74	95% Percentile Bootstrap UCL	7.273
95% BCA Bootstrap UCL	7.823		
90% Chebyshev(Mean, Sd) UCL	9.355	95% Chebyshev(Mean, Sd) UCL	11.72
97.5% Chebyshev(Mean, Sd) UCL	15.01	99% Chebyshev(Mean, Sd) UCL	21.46

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.87	Mean	24.51
Maximum	55.7	Median	21.2
SD	18.89	Std. Error of Mean	7.713
Coefficient of Variation	0.771	Skewness	0.896
Mean of logged Data	2.928	SD of logged Data	0.824

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.05	95% Adjusted-CLT UCL (Chen-1995)	40.21
		95% Modified-t UCL (Johnson-1978)	40.52

Nonparametric Distribution Free UCLs

95% CLT UCL	37.2	95% Jackknife UCL	40.05
95% Standard Bootstrap UCL	35.92	95% Bootstrap-t UCL	46.75
95% Hall's Bootstrap UCL	37.06	95% Percentile Bootstrap UCL	36.07
95% BCA Bootstrap UCL	39.42		
90% Chebyshev(Mean, Sd) UCL	47.65	95% Chebyshev(Mean, Sd) UCL	58.13
97.5% Chebyshev(Mean, Sd) UCL	72.68	99% Chebyshev(Mean, Sd) UCL	101.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.1	Mean	35.78
Maximum	76.2	Median	32.05
SD	26.6	Std. Error of Mean	10.86
Coefficient of Variation	0.743	Skewness	0.575
Mean of logged Data	3.308	SD of logged Data	0.831

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	57.66	95% Adjusted-CLT UCL (Chen-1995)	56.37
		95% Modified-t UCL (Johnson-1978)	58.09

Nonparametric Distribution Free UCLs

95% CLT UCL	53.64	95% Jackknife UCL	57.66
95% Standard Bootstrap UCL	52.31	95% Bootstrap-t UCL	64.6
95% Hall's Bootstrap UCL	49.45	95% Percentile Bootstrap UCL	52.38
95% BCA Bootstrap UCL	55.6		
90% Chebyshev(Mean, Sd) UCL	68.36	95% Chebyshev(Mean, Sd) UCL	83.11
97.5% Chebyshev(Mean, Sd) UCL	103.6	99% Chebyshev(Mean, Sd) UCL	143.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.7	Mean	46.25
Maximum	95.8	Median	42.55
SD	33.03	Std. Error of Mean	13.48
Coefficient of Variation	0.714	Skewness	0.525
Mean of logged Data	3.586	SD of logged Data	0.797

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	73.42	95% Adjusted-CLT UCL (Chen-1995)	71.52
		95% Modified-t UCL (Johnson-1978)	73.9

Nonparametric Distribution Free UCLs

95% CLT UCL	68.43	95% Jackknife UCL	73.42
95% Standard Bootstrap UCL	66.87	95% Bootstrap-t UCL	82.28
95% Hall's Bootstrap UCL	62.89	95% Percentile Bootstrap UCL	67.3
95% BCA Bootstrap UCL	66.77		
90% Chebyshev(Mean, Sd) UCL	86.7	95% Chebyshev(Mean, Sd) UCL	105
97.5% Chebyshev(Mean, Sd) UCL	130.5	99% Chebyshev(Mean, Sd) UCL	180.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.89	Mean	27.65
Maximum	57.1	Median	25.5
SD	19.65	Std. Error of Mean	8.021
Coefficient of Variation	0.711	Skewness	0.521
Mean of logged Data	3.074	SD of logged Data	0.793

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.81	95% Adjusted-CLT UCL (Chen-1995)	42.66
		95% Modified-t UCL (Johnson-1978)	44.09

Nonparametric Distribution Free UCLs

95% CLT UCL	40.84	95% Jackknife UCL	43.81
95% Standard Bootstrap UCL	40.15	95% Bootstrap-t UCL	48.61
95% Hall's Bootstrap UCL	37.55	95% Percentile Bootstrap UCL	39.83
95% BCA Bootstrap UCL	40.47		
90% Chebyshev(Mean, Sd) UCL	51.71	95% Chebyshev(Mean, Sd) UCL	62.61
97.5% Chebyshev(Mean, Sd) UCL	77.74	99% Chebyshev(Mean, Sd) UCL	107.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.19	Mean	17.8
Maximum	39.9	Median	15.82
SD	13.67	Std. Error of Mean	5.579
Coefficient of Variation	0.768	Skewness	0.799
Mean of logged Data	2.602	SD of logged Data	0.84

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.04	95% Adjusted-CLT UCL (Chen-1995)	28.92

		95% Modified-t UCL (Johnson-1978)	29.34

Nonparametric Distribution Free UCLs

95% CLT UCL	26.98	95% Jackknife UCL	29.04
95% Standard Bootstrap UCL	26.17	95% Bootstrap-t UCL	33.89
95% Hall's Bootstrap UCL	26.34	95% Percentile Bootstrap UCL	26.25
95% BCA Bootstrap UCL	28.5		
90% Chebyshev(Mean, Sd) UCL	34.54	95% Chebyshev(Mean, Sd) UCL	42.12
97.5% Chebyshev(Mean, Sd) UCL	52.64	99% Chebyshev(Mean, Sd) UCL	73.31

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.6	Mean	32.03
Maximum	67.6	Median	29.2
SD	23.12	Std. Error of Mean	9.438
Coefficient of Variation	0.722	Skewness	0.61
Mean of logged Data	3.219	SD of logged Data	0.794

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.05	95% Adjusted-CLT UCL (Chen-1995)	50.07
		95% Modified-t UCL (Johnson-1978)	51.44

Nonparametric Distribution Free UCLs

95% CLT UCL	47.56	95% Jackknife UCL	51.05
95% Standard Bootstrap UCL	45.94	95% Bootstrap-t UCL	57.88
95% Hall's Bootstrap UCL	44.24	95% Percentile Bootstrap UCL	46.35
95% BCA Bootstrap UCL	46.97		
90% Chebyshev(Mean, Sd) UCL	60.35	95% Chebyshev(Mean, Sd) UCL	73.17
97.5% Chebyshev(Mean, Sd) UCL	90.97	99% Chebyshev(Mean, Sd) UCL	125.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.26	Mean	7.512
Maximum	14.8	Median	6.765
SD	4.796	Std. Error of Mean	1.958
Coefficient of Variation	0.639	Skewness	0.581
Mean of logged Data	1.833	SD of logged Data	0.673

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.46	95% Adjusted-CLT UCL (Chen-1995)	11.23
		95% Modified-t UCL (Johnson-1978)	11.53

Nonparametric Distribution Free UCLs

95% CLT UCL	10.73	95% Jackknife UCL	11.46
95% Standard Bootstrap UCL	10.48	95% Bootstrap-t UCL	13.1
95% Hall's Bootstrap UCL	9.994	95% Percentile Bootstrap UCL	10.5
95% BCA Bootstrap UCL	10.5		
90% Chebyshev(Mean, Sd) UCL	13.39	95% Chebyshev(Mean, Sd) UCL	16.05
97.5% Chebyshev(Mean, Sd) UCL	19.74	99% Chebyshev(Mean, Sd) UCL	26.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.2	Mean	45.03
Maximum	112	Median	36.65
SD	37.83	Std. Error of Mean	15.45
Coefficient of Variation	0.84	Skewness	1.272
Mean of logged Data	3.51	SD of logged Data	0.849

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	76.16	95% Adjusted-CLT UCL (Chen-1995)	79.01
		95% Modified-t UCL (Johnson-1978)	77.49

Nonparametric Distribution Free UCLs

95% CLT UCL	70.44	95% Jackknife UCL	76.16

95% Standard Bootstrap UCL	68.25	95% Bootstrap-t UCL	99.54
95% Hall's Bootstrap UCL	82.71	95% Percentile Bootstrap UCL	69.67
95% BCA Bootstrap UCL	76.63		
90% Chebyshev(Mean, Sd) UCL	91.37	95% Chebyshev(Mean, Sd) UCL	112.4
97.5% Chebyshev(Mean, Sd) UCL	141.5	99% Chebyshev(Mean, Sd) UCL	198.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.195	Mean	1.533
Maximum	2.89	Median	1.29
SD	0.666	Std. Error of Mean	0.272
Coefficient of Variation	0.434	Skewness	2.424
Mean of logged Data	0.37	SD of logged Data	0.34

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.081	95% Adjusted-CLT UCL (Chen-1995)	2.268
		95% Modified-t UCL (Johnson-1978)	2.126

Nonparametric Distribution Free UCLs

95% CLT UCL	1.981	95% Jackknife UCL	2.081
95% Standard Bootstrap UCL	1.927	95% Bootstrap-t UCL	6.462
95% Hall's Bootstrap UCL	6.498	95% Percentile Bootstrap UCL	2.066
95% BCA Bootstrap UCL	2.093		
90% Chebyshev(Mean, Sd) UCL	2.349	95% Chebyshev(Mean, Sd) UCL	2.719
97.5% Chebyshev(Mean, Sd) UCL	3.232	99% Chebyshev(Mean, Sd) UCL	4.239

Suggested UCL to Use

95% Student's-t UCL	2.081	or 95% Modified-t UCL	2.126

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.4	Mean	30.82
Maximum	65.9	Median	26.7

SD	22.25	Std. Error of Mean	9.085
Coefficient of Variation	0.722	Skewness	0.716
Mean of logged Data	3.187	SD of logged Data	0.778

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.12	95% Adjusted-CLT UCL (Chen-1995)	48.6
		95% Modified-t UCL (Johnson-1978)	49.57

Nonparametric Distribution Free UCLs

95% CLT UCL	45.76	95% Jackknife UCL	49.12
95% Standard Bootstrap UCL	44.42	95% Bootstrap-t UCL	59.12
95% Hall's Bootstrap UCL	43.62	95% Percentile Bootstrap UCL	44.48
95% BCA Bootstrap UCL	47.58		
90% Chebyshev(Mean, Sd) UCL	58.07	95% Chebyshev(Mean, Sd) UCL	70.42
97.5% Chebyshev(Mean, Sd) UCL	87.55	99% Chebyshev(Mean, Sd) UCL	121.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.3	Mean	1.695
Maximum	3.07	Median	1.405
SD	0.684	Std. Error of Mean	0.279
Coefficient of Variation	0.403	Skewness	2.296
Mean of logged Data	0.476	SD of logged Data	0.326

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.258	95% Adjusted-CLT UCL (Chen-1995)	2.434
		95% Modified-t UCL (Johnson-1978)	2.301

Nonparametric Distribution Free UCLs

95% CLT UCL	2.154	95% Jackknife UCL	2.258
95% Standard Bootstrap UCL	2.117	95% Bootstrap-t UCL	6.244
95% Hall's Bootstrap UCL	4.871	95% Percentile Bootstrap UCL	2.215
95% BCA Bootstrap UCL	2.298		
90% Chebyshev(Mean, Sd) UCL	2.533	95% Chebyshev(Mean, Sd) UCL	2.912

97.5% Chebyshev(Mean, Sd) UCL	3.438	99% Chebyshev(Mean, Sd) UCL	4.473

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.59	Mean	19.95
Maximum	61.7	Median	13.46
SD	21.44	Std. Error of Mean	8.753
Coefficient of Variation	1.075	Skewness	1.985
Mean of logged Data	2.597	SD of logged Data	0.935

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.58	95% Adjusted-CLT UCL (Chen-1995)	41.92
		95% Modified-t UCL (Johnson-1978)	38.77

Nonparametric Distribution Free UCLs

95% CLT UCL	34.34	95% Jackknife UCL	37.58
95% Standard Bootstrap UCL	32.95	95% Bootstrap-t UCL	64.18
95% Hall's Bootstrap UCL	86.02	95% Percentile Bootstrap UCL	34.02
95% BCA Bootstrap UCL	40.4		
90% Chebyshev(Mean, Sd) UCL	46.2	95% Chebyshev(Mean, Sd) UCL	58.1
97.5% Chebyshev(Mean, Sd) UCL	74.61	99% Chebyshev(Mean, Sd) UCL	107

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.7	Mean	43.37
Maximum	102	Median	36.35
SD	34.44	Std. Error of Mean	14.06
Coefficient of Variation	0.794	Skewness	1.052
Mean of logged Data	3.492	SD of logged Data	0.828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.7	95% Adjusted-CLT UCL (Chen-1995)	72.95
		95% Modified-t UCL (Johnson-1978)	72.7

Nonparametric Distribution Free UCLs

95% CLT UCL	66.49	95% Jackknife UCL	71.7
95% Standard Bootstrap UCL	64.28	95% Bootstrap-t UCL	90.38
95% Hall's Bootstrap UCL	69.36	95% Percentile Bootstrap UCL	65.4
95% BCA Bootstrap UCL	70.47		
90% Chebyshev(Mean, Sd) UCL	85.54	95% Chebyshev(Mean, Sd) UCL	104.6
97.5% Chebyshev(Mean, Sd) UCL	131.2	99% Chebyshev(Mean, Sd) UCL	183.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:38:10 AM
From File	21078B.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.2	Mean	12.9
Maximum	14	Median	12.75
SD	0.6	Std. Error of Mean	0.245
Coefficient of Variation	0.0465	Skewness	1.35
Mean of logged Data	2.556	SD of logged Data	0.0456

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.39	95% Adjusted-CLT UCL (Chen-1995)	13.45
		95% Modified-t UCL (Johnson-1978)	13.42

Nonparametric Distribution Free UCLs

95% CLT UCL	13.3	95% Jackknife UCL	13.39
95% Standard Bootstrap UCL	13.26	95% Bootstrap-t UCL	13.67
95% Hall's Bootstrap UCL	15.68	95% Percentile Bootstrap UCL	13.3
95% BCA Bootstrap UCL	13.4		
90% Chebyshev(Mean, Sd) UCL	13.63	95% Chebyshev(Mean, Sd) UCL	13.97
97.5% Chebyshev(Mean, Sd) UCL	14.43	99% Chebyshev(Mean, Sd) UCL	15.34

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	22.3	Mean	99.53
Maximum	322	Median	53.15
SD	113.2	Std. Error of Mean	46.21
Coefficient of Variation	1.137	Skewness	2.084
Mean of logged Data	4.182	SD of logged Data	0.946

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	192.7	95% Adjusted-CLT UCL (Chen-1995)	217.6
		95% Modified-t UCL (Johnson-1978)	199.2

Nonparametric Distribution Free UCLs

95% CLT UCL	175.5	95% Jackknife UCL	192.7
95% Standard Bootstrap UCL	169.6	95% Bootstrap-t UCL	570.9
95% Hall's Bootstrap UCL	565.1	95% Percentile Bootstrap UCL	180.6
95% BCA Bootstrap UCL	197.2		
90% Chebyshev(Mean, Sd) UCL	238.2	95% Chebyshev(Mean, Sd) UCL	301
97.5% Chebyshev(Mean, Sd) UCL	388.1	99% Chebyshev(Mean, Sd) UCL	559.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.8	Mean	48.3
Maximum	50.8	Median	48.6
SD	2.259	Std. Error of Mean	0.922
Coefficient of Variation	0.0468	Skewness	-0.594
Mean of logged Data	3.877	SD of logged Data	0.0473

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.16	95% Adjusted-CLT UCL (Chen-1995)	49.58
		95% Modified-t UCL (Johnson-1978)	50.12

Nonparametric Distribution Free UCLs

95% CLT UCL	49.82	95% Jackknife UCL	50.16
95% Standard Bootstrap UCL	49.67	95% Bootstrap-t UCL	49.87
95% Hall's Bootstrap UCL	49.47	95% Percentile Bootstrap UCL	49.62
95% BCA Bootstrap UCL	49.55		
90% Chebyshev(Mean, Sd) UCL	51.07	95% Chebyshev(Mean, Sd) UCL	52.32
97.5% Chebyshev(Mean, Sd) UCL	54.06	99% Chebyshev(Mean, Sd) UCL	57.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.725	Mean	0.88
Maximum	1.05	Median	0.855
SD	0.126	Std. Error of Mean	0.0516
Coefficient of Variation	0.144	Skewness	0.255
Mean of logged Data	-0.136	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.984	95% Adjusted-CLT UCL (Chen-1995)	0.971
		95% Modified-t UCL (Johnson-1978)	0.985

Nonparametric Distribution Free UCLs

95% CLT UCL	0.965	95% Jackknife UCL	0.984
95% Standard Bootstrap UCL	0.958	95% Bootstrap-t UCL	0.994
95% Hall's Bootstrap UCL	0.979	95% Percentile Bootstrap UCL	0.958
95% BCA Bootstrap UCL	0.962		
90% Chebyshev(Mean, Sd) UCL	1.035	95% Chebyshev(Mean, Sd) UCL	1.105
97.5% Chebyshev(Mean, Sd) UCL	1.202	99% Chebyshev(Mean, Sd) UCL	1.393

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.318	Mean	0.769
Maximum	1.25	Median	0.772
SD	0.35	Std. Error of Mean	0.143
Coefficient of Variation	0.455	Skewness	0.106
Mean of logged Data	-0.362	SD of logged Data	0.508

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.057	95% Adjusted-CLT UCL (Chen-1995)	1.01
		95% Modified-t UCL (Johnson-1978)	1.058

Nonparametric Distribution Free UCLs

95% CLT UCL	1.004	95% Jackknife UCL	1.057
95% Standard Bootstrap UCL	0.98	95% Bootstrap-t UCL	1.086
95% Hall's Bootstrap UCL	0.975	95% Percentile Bootstrap UCL	0.99
95% BCA Bootstrap UCL	0.971		
90% Chebyshev(Mean, Sd) UCL	1.197	95% Chebyshev(Mean, Sd) UCL	1.391
97.5% Chebyshev(Mean, Sd) UCL	1.661	99% Chebyshev(Mean, Sd) UCL	2.19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	2.682
Maximum	4.01	Median	2.483
SD	0.766	Std. Error of Mean	0.313
Coefficient of Variation	0.286	Skewness	1.151
Mean of logged Data	0.955	SD of logged Data	0.268

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.312	95% Adjusted-CLT UCL (Chen-1995)	3.353
		95% Modified-t UCL (Johnson-1978)	3.336

Nonparametric Distribution Free UCLs

95% CLT UCL	3.196	95% Jackknife UCL	3.312
95% Standard Bootstrap UCL	3.152	95% Bootstrap-t UCL	3.859
95% Hall's Bootstrap UCL	3.374	95% Percentile Bootstrap UCL	3.161
95% BCA Bootstrap UCL	3.24		
90% Chebyshev(Mean, Sd) UCL	3.62	95% Chebyshev(Mean, Sd) UCL	4.045
97.5% Chebyshev(Mean, Sd) UCL	4.635	99% Chebyshev(Mean, Sd) UCL	5.794

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.79	Mean	21.67
Maximum	40.4	Median	21.65
SD	13.45	Std. Error of Mean	5.491
Coefficient of Variation	0.621	Skewness	0.259
Mean of logged Data	2.883	SD of logged Data	0.71

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.73	95% Adjusted-CLT UCL (Chen-1995)	31.32
		95% Modified-t UCL (Johnson-1978)	32.83

Nonparametric Distribution Free UCLs

95% CLT UCL	30.7	95% Jackknife UCL	32.73
95% Standard Bootstrap UCL	29.81	95% Bootstrap-t UCL	33.96
95% Hall's Bootstrap UCL	28.19	95% Percentile Bootstrap UCL	29.82
95% BCA Bootstrap UCL	30.55		
90% Chebyshev(Mean, Sd) UCL	38.14	95% Chebyshev(Mean, Sd) UCL	45.6
97.5% Chebyshev(Mean, Sd) UCL	55.96	99% Chebyshev(Mean, Sd) UCL	76.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.87	Mean	26.8
Maximum	46.8	Median	27.45
SD	16.27	Std. Error of Mean	6.641
Coefficient of Variation	0.607	Skewness	0.0641
Mean of logged Data	3.1	SD of logged Data	0.702

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.18	95% Adjusted-CLT UCL (Chen-1995)	37.9
		95% Modified-t UCL (Johnson-1978)	40.21

Nonparametric Distribution Free UCLs

95% CLT UCL	37.72	95% Jackknife UCL	40.18
95% Standard Bootstrap UCL	36.7	95% Bootstrap-t UCL	41.99
95% Hall's Bootstrap UCL	33.51	95% Percentile Bootstrap UCL	36.6
95% BCA Bootstrap UCL	37.68		
90% Chebyshev(Mean, Sd) UCL	46.72	95% Chebyshev(Mean, Sd) UCL	55.74
97.5% Chebyshev(Mean, Sd) UCL	68.27	99% Chebyshev(Mean, Sd) UCL	92.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.2	Mean	38.32
Maximum	71.6	Median	37.7
SD	23.83	Std. Error of Mean	9.729
Coefficient of Variation	0.622	Skewness	0.287
Mean of logged Data	3.455	SD of logged Data	0.702

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	57.92	95% Adjusted-CLT UCL (Chen-1995)	55.54
		95% Modified-t UCL (Johnson-1978)	58.11

Nonparametric Distribution Free UCLs

95% CLT UCL	54.32	95% Jackknife UCL	57.92
95% Standard Bootstrap UCL	52.54	95% Bootstrap-t UCL	61.87
95% Hall's Bootstrap UCL	49.57	95% Percentile Bootstrap UCL	52.92
95% BCA Bootstrap UCL	53.92		
90% Chebyshev(Mean, Sd) UCL	67.5	95% Chebyshev(Mean, Sd) UCL	80.73
97.5% Chebyshev(Mean, Sd) UCL	99.08	99% Chebyshev(Mean, Sd) UCL	135.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.5	Mean	18.32
Maximum	32.9	Median	18.85
SD	11.03	Std. Error of Mean	4.504
Coefficient of Variation	0.602	Skewness	0.114
Mean of logged Data	2.721	SD of logged Data	0.704

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.4	95% Adjusted-CLT UCL (Chen-1995)	25.95
		95% Modified-t UCL (Johnson-1978)	27.43

Nonparametric Distribution Free UCLs

95% CLT UCL	25.73	95% Jackknife UCL	27.4
95% Standard Bootstrap UCL	25.11	95% Bootstrap-t UCL	28.52
95% Hall's Bootstrap UCL	23.39	95% Percentile Bootstrap UCL	24.8
95% BCA Bootstrap UCL	25		
90% Chebyshev(Mean, Sd) UCL	31.83	95% Chebyshev(Mean, Sd) UCL	37.95
97.5% Chebyshev(Mean, Sd) UCL	46.45	99% Chebyshev(Mean, Sd) UCL	63.13

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.95	Mean	14.03
Maximum	23.5	Median	15.15
SD	7.902	Std. Error of Mean	3.226
Coefficient of Variation	0.563	Skewness	-0.162
Mean of logged Data	2.468	SD of logged Data	0.689

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.53	95% Adjusted-CLT UCL (Chen-1995)	19.11

		95% Modified-t UCL (Johnson-1978)	20.5

Nonparametric Distribution Free UCLs

95% CLT UCL	19.34	95% Jackknife UCL	20.53
95% Standard Bootstrap UCL	18.98	95% Bootstrap-t UCL	20.22
95% Hall's Bootstrap UCL	17.8	95% Percentile Bootstrap UCL	18.78
95% BCA Bootstrap UCL	18.5		
90% Chebyshev(Mean, Sd) UCL	23.71	95% Chebyshev(Mean, Sd) UCL	28.1
97.5% Chebyshev(Mean, Sd) UCL	34.18	99% Chebyshev(Mean, Sd) UCL	46.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.95	Mean	27.48
Maximum	51.6	Median	27.35
SD	17.12	Std. Error of Mean	6.99
Coefficient of Variation	0.623	Skewness	0.281
Mean of logged Data	3.119	SD of logged Data	0.713

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.56	95% Adjusted-CLT UCL (Chen-1995)	39.83
		95% Modified-t UCL (Johnson-1978)	41.69

Nonparametric Distribution Free UCLs

95% CLT UCL	38.97	95% Jackknife UCL	41.56
95% Standard Bootstrap UCL	37.89	95% Bootstrap-t UCL	43.33
95% Hall's Bootstrap UCL	36.18	95% Percentile Bootstrap UCL	38.11
95% BCA Bootstrap UCL	37.73		
90% Chebyshev(Mean, Sd) UCL	48.44	95% Chebyshev(Mean, Sd) UCL	57.94
97.5% Chebyshev(Mean, Sd) UCL	71.13	99% Chebyshev(Mean, Sd) UCL	97.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.54	Mean	5.519
Maximum	8.29	Median	5.94
SD	2.238	Std. Error of Mean	0.914
Coefficient of Variation	0.406	Skewness	-0.289
Mean of logged Data	1.626	SD of logged Data	0.465

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.361	95% Adjusted-CLT UCL (Chen-1995)	6.907
		95% Modified-t UCL (Johnson-1978)	7.343

Nonparametric Distribution Free UCLs

95% CLT UCL	7.022	95% Jackknife UCL	7.361
95% Standard Bootstrap UCL	6.92	95% Bootstrap-t UCL	7.136
95% Hall's Bootstrap UCL	6.689	95% Percentile Bootstrap UCL	6.891
95% BCA Bootstrap UCL	6.763		
90% Chebyshev(Mean, Sd) UCL	8.261	95% Chebyshev(Mean, Sd) UCL	9.502
97.5% Chebyshev(Mean, Sd) UCL	11.23	99% Chebyshev(Mean, Sd) UCL	14.61

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.4	Mean	37.88
Maximum	72.3	Median	35.8
SD	24.98	Std. Error of Mean	10.2
Coefficient of Variation	0.659	Skewness	0.309
Mean of logged Data	3.422	SD of logged Data	0.738

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.43	95% Adjusted-CLT UCL (Chen-1995)	56.03
		95% Modified-t UCL (Johnson-1978)	58.65

Nonparametric Distribution Free UCLs

95% CLT UCL	54.66	95% Jackknife UCL	58.43
95% Standard Bootstrap UCL	53.5	95% Bootstrap-t UCL	62.66
95% Hall's Bootstrap UCL	48.53	95% Percentile Bootstrap UCL	53.62
95% BCA Bootstrap UCL	53.98		
90% Chebyshev(Mean, Sd) UCL	68.48	95% Chebyshev(Mean, Sd) UCL	82.33
97.5% Chebyshev(Mean, Sd) UCL	101.6	99% Chebyshev(Mean, Sd) UCL	139.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.18	Mean	1.263
Maximum	1.325	Median	1.265
SD	0.0589	Std. Error of Mean	0.024
Coefficient of Variation	0.0466	Skewness	-0.26
Mean of logged Data	0.232	SD of logged Data	0.0469

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.311	95% Adjusted-CLT UCL (Chen-1995)	1.299
		95% Modified-t UCL (Johnson-1978)	1.311

Nonparametric Distribution Free UCLs

95% CLT UCL	1.302	95% Jackknife UCL	1.311
95% Standard Bootstrap UCL	1.298	95% Bootstrap-t UCL	1.309
95% Hall's Bootstrap UCL	1.301	95% Percentile Bootstrap UCL	1.299
95% BCA Bootstrap UCL	1.294		
90% Chebyshev(Mean, Sd) UCL	1.335	95% Chebyshev(Mean, Sd) UCL	1.367
97.5% Chebyshev(Mean, Sd) UCL	1.413	99% Chebyshev(Mean, Sd) UCL	1.502

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.53	Mean	21.79
Maximum	37.1	Median	21.8
SD	12.92	Std. Error of Mean	5.274
Coefficient of Variation	0.593	Skewness	0.0261
Mean of logged Data	2.899	SD of logged Data	0.697

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.42	95% Adjusted-CLT UCL (Chen-1995)	30.53
		95% Modified-t UCL (Johnson-1978)	32.43

Nonparametric Distribution Free UCLs

95% CLT UCL	30.47	95% Jackknife UCL	32.42
95% Standard Bootstrap UCL	29.58	95% Bootstrap-t UCL	32.15
95% Hall's Bootstrap UCL	28.03	95% Percentile Bootstrap UCL	29.59
95% BCA Bootstrap UCL	29.59		
90% Chebyshev(Mean, Sd) UCL	37.62	95% Chebyshev(Mean, Sd) UCL	44.78
97.5% Chebyshev(Mean, Sd) UCL	54.73	99% Chebyshev(Mean, Sd) UCL	74.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.91	Mean	1.488
Maximum	2.28	Median	1.375
SD	0.544	Std. Error of Mean	0.222
Coefficient of Variation	0.365	Skewness	0.578
Mean of logged Data	0.342	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1.935	95% Adjusted-CLT UCL (Chen-1995)	1.909
		95% Modified-t UCL (Johnson-1978)	1.944

Nonparametric Distribution Free UCLs

95% CLT UCL	1.853	95% Jackknife UCL	1.935
95% Standard Bootstrap UCL	1.822	95% Bootstrap-t UCL	2.148
95% Hall's Bootstrap UCL	2.809	95% Percentile Bootstrap UCL	1.833
95% BCA Bootstrap UCL	1.853		
90% Chebyshev(Mean, Sd) UCL	2.154	95% Chebyshev(Mean, Sd) UCL	2.456
97.5% Chebyshev(Mean, Sd) UCL	2.874	99% Chebyshev(Mean, Sd) UCL	3.696

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.78	Mean	14.78
Maximum	30.7	Median	13.5
SD	10.03	Std. Error of Mean	4.094
Coefficient of Variation	0.678	Skewness	0.708
Mean of logged Data	2.482	SD of logged Data	0.731

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.03	95% Adjusted-CLT UCL (Chen-1995)	22.78
		95% Modified-t UCL (Johnson-1978)	23.23

Nonparametric Distribution Free UCLs

95% CLT UCL	21.52	95% Jackknife UCL	23.03
95% Standard Bootstrap UCL	21.11	95% Bootstrap-t UCL	26.48
95% Hall's Bootstrap UCL	20.82	95% Percentile Bootstrap UCL	21
95% BCA Bootstrap UCL	21.13		
90% Chebyshev(Mean, Sd) UCL	27.06	95% Chebyshev(Mean, Sd) UCL	32.63
97.5% Chebyshev(Mean, Sd) UCL	40.35	99% Chebyshev(Mean, Sd) UCL	55.51

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13	Mean	36.38
Maximum	69.4	Median	34.4
SD	23.88	Std. Error of Mean	9.75
Coefficient of Variation	0.656	Skewness	0.312
Mean of logged Data	3.383	SD of logged Data	0.736

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.03	95% Adjusted-CLT UCL (Chen-1995)	53.75
		95% Modified-t UCL (Johnson-1978)	56.24

Nonparametric Distribution Free UCLs

95% CLT UCL	52.42	95% Jackknife UCL	56.03
95% Standard Bootstrap UCL	51.14	95% Bootstrap-t UCL	59.74
95% Hall's Bootstrap UCL	47.01	95% Percentile Bootstrap UCL	51.13
95% BCA Bootstrap UCL	51.67		
90% Chebyshev(Mean, Sd) UCL	65.63	95% Chebyshev(Mean, Sd) UCL	78.88
97.5% Chebyshev(Mean, Sd) UCL	97.27	99% Chebyshev(Mean, Sd) UCL	133.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:39:53 AM
From File	21078C.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.3	Mean	17.17
Maximum	21.2	Median	16.4
SD	2.235	Std. Error of Mean	0.912
Coefficient of Variation	0.13	Skewness	1.438
Mean of logged Data	2.836	SD of logged Data	0.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.01	95% Adjusted-CLT UCL (Chen-1995)	19.24
		95% Modified-t UCL (Johnson-1978)	19.09

Nonparametric Distribution Free UCLs

95% CLT UCL	18.67	95% Jackknife UCL	19.01
95% Standard Bootstrap UCL	18.55	95% Bootstrap-t UCL	20.57
95% Hall's Bootstrap UCL	25.4	95% Percentile Bootstrap UCL	18.67
95% BCA Bootstrap UCL	19		
90% Chebyshev(Mean, Sd) UCL	19.9	95% Chebyshev(Mean, Sd) UCL	21.14
97.5% Chebyshev(Mean, Sd) UCL	22.86	99% Chebyshev(Mean, Sd) UCL	26.24

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23.8	Mean	46.25
Maximum	109	Median	27.9
SD	34.28	Std. Error of Mean	13.99
Coefficient of Variation	0.741	Skewness	1.63
Mean of logged Data	3.649	SD of logged Data	0.628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	74.45	95% Adjusted-CLT UCL (Chen-1995)	79.21
		95% Modified-t UCL (Johnson-1978)	76

Nonparametric Distribution Free UCLs

95% CLT UCL	69.27	95% Jackknife UCL	74.45
95% Standard Bootstrap UCL	67.35	95% Bootstrap-t UCL	324.8
95% Hall's Bootstrap UCL	247.3	95% Percentile Bootstrap UCL	67.72
95% BCA Bootstrap UCL	75.22		
90% Chebyshev(Mean, Sd) UCL	88.23	95% Chebyshev(Mean, Sd) UCL	107.2
97.5% Chebyshev(Mean, Sd) UCL	133.6	99% Chebyshev(Mean, Sd) UCL	185.5

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	52.8	Mean	57.93
Maximum	63.3	Median	57.9
SD	5.181	Std. Error of Mean	2.115
Coefficient of Variation	0.0894	Skewness	0.00935
Mean of logged Data	4.056	SD of logged Data	0.0896

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.2	95% Adjusted-CLT UCL (Chen-1995)	61.42
		95% Modified-t UCL (Johnson-1978)	62.2

Nonparametric Distribution Free UCLs

95% CLT UCL	61.41	95% Jackknife UCL	62.2
95% Standard Bootstrap UCL	61.14	95% Bootstrap-t UCL	62.35
95% Hall's Bootstrap UCL	59.72	95% Percentile Bootstrap UCL	61.12
95% BCA Bootstrap UCL	61.12		
90% Chebyshev(Mean, Sd) UCL	64.28	95% Chebyshev(Mean, Sd) UCL	67.15
97.5% Chebyshev(Mean, Sd) UCL	71.14	99% Chebyshev(Mean, Sd) UCL	78.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.683	Mean	0.954
Maximum	1.25	Median	0.952
SD	0.183	Std. Error of Mean	0.0746
Coefficient of Variation	0.191	Skewness	0.282
Mean of logged Data	-0.0623	SD of logged Data	0.195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.105	95% Adjusted-CLT UCL (Chen-1995)	1.086
		95% Modified-t UCL (Johnson-1978)	1.106

Nonparametric Distribution Free UCLs

95% CLT UCL	1.077	95% Jackknife UCL	1.105
95% Standard Bootstrap UCL	1.068	95% Bootstrap-t UCL	1.108
95% Hall's Bootstrap UCL	1.158	95% Percentile Bootstrap UCL	1.062
95% BCA Bootstrap UCL	1.066		
90% Chebyshev(Mean, Sd) UCL	1.178	95% Chebyshev(Mean, Sd) UCL	1.279
97.5% Chebyshev(Mean, Sd) UCL	1.42	99% Chebyshev(Mean, Sd) UCL	1.696

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.322	Mean	0.534
Maximum	0.723	Median	0.535
SD	0.158	Std. Error of Mean	0.0644
Coefficient of Variation	0.296	Skewness	-0.102
Mean of logged Data	-0.667	SD of logged Data	0.314

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.664	95% Adjusted-CLT UCL (Chen-1995)	0.637
		95% Modified-t UCL (Johnson-1978)	0.663

Nonparametric Distribution Free UCLs

95% CLT UCL	0.64	95% Jackknife UCL	0.664
95% Standard Bootstrap UCL	0.63	95% Bootstrap-t UCL	0.675
95% Hall's Bootstrap UCL	0.658	95% Percentile Bootstrap UCL	0.629
95% BCA Bootstrap UCL	0.625		
90% Chebyshev(Mean, Sd) UCL	0.727	95% Chebyshev(Mean, Sd) UCL	0.815
97.5% Chebyshev(Mean, Sd) UCL	0.936	99% Chebyshev(Mean, Sd) UCL	1.175

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.76	Mean	1.989
Maximum	2.15	Median	2.04
SD	0.162	Std. Error of Mean	0.066
Coefficient of Variation	0.0813	Skewness	-0.703
Mean of logged Data	0.685	SD of logged Data	0.0831

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.122	95% Adjusted-CLT UCL (Chen-1995)	2.078
		95% Modified-t UCL (Johnson-1978)	2.119

Nonparametric Distribution Free UCLs

95% CLT UCL	2.098	95% Jackknife UCL	2.122
95% Standard Bootstrap UCL	2.09	95% Bootstrap-t UCL	2.088
95% Hall's Bootstrap UCL	2.061	95% Percentile Bootstrap UCL	2.088
95% BCA Bootstrap UCL	2.076		
90% Chebyshev(Mean, Sd) UCL	2.187	95% Chebyshev(Mean, Sd) UCL	2.277
97.5% Chebyshev(Mean, Sd) UCL	2.402	99% Chebyshev(Mean, Sd) UCL	2.646

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.94	Mean	13.7
Maximum	23.4	Median	15.15
SD	7.255	Std. Error of Mean	2.962
Coefficient of Variation	0.529	Skewness	-0.171
Mean of logged Data	2.458	SD of logged Data	0.673

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.67	95% Adjusted-CLT UCL (Chen-1995)	18.35
		95% Modified-t UCL (Johnson-1978)	19.64

Nonparametric Distribution Free UCLs

95% CLT UCL	18.58	95% Jackknife UCL	19.67
95% Standard Bootstrap UCL	18.2	95% Bootstrap-t UCL	19.07
95% Hall's Bootstrap UCL	17.94	95% Percentile Bootstrap UCL	18.37
95% BCA Bootstrap UCL	17.95		
90% Chebyshev(Mean, Sd) UCL	22.59	95% Chebyshev(Mean, Sd) UCL	26.61
97.5% Chebyshev(Mean, Sd) UCL	32.2	99% Chebyshev(Mean, Sd) UCL	43.17

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	5.26	Mean	18.77
Maximum	32.2	Median	20.05
SD	10.35	Std. Error of Mean	4.224
Coefficient of Variation	0.551	Skewness	-0.0739
Mean of logged Data	2.764	SD of logged Data	0.687

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.28	95% Adjusted-CLT UCL (Chen-1995)	25.58
		95% Modified-t UCL (Johnson-1978)	27.26

Nonparametric Distribution Free UCLs

95% CLT UCL	25.71	95% Jackknife UCL	27.28
95% Standard Bootstrap UCL	25.06	95% Bootstrap-t UCL	27.26
95% Hall's Bootstrap UCL	24.49	95% Percentile Bootstrap UCL	25.28
95% BCA Bootstrap UCL	24.84		
90% Chebyshev(Mean, Sd) UCL	31.44	95% Chebyshev(Mean, Sd) UCL	37.18
97.5% Chebyshev(Mean, Sd) UCL	45.14	99% Chebyshev(Mean, Sd) UCL	60.79

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.11	Mean	26.12
Maximum	42.8	Median	28.25
SD	13.77	Std. Error of Mean	5.623
Coefficient of Variation	0.527	Skewness	-0.195
Mean of logged Data	3.11	SD of logged Data	0.65

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.45	95% Adjusted-CLT UCL (Chen-1995)	34.89
		95% Modified-t UCL (Johnson-1978)	37.38

Nonparametric Distribution Free UCLs

95% CLT UCL	35.37	95% Jackknife UCL	37.45
95% Standard Bootstrap UCL	34.68	95% Bootstrap-t UCL	37.03
95% Hall's Bootstrap UCL	32.97	95% Percentile Bootstrap UCL	34.13
95% BCA Bootstrap UCL	34.12		
90% Chebyshev(Mean, Sd) UCL	42.99	95% Chebyshev(Mean, Sd) UCL	50.63
97.5% Chebyshev(Mean, Sd) UCL	61.24	99% Chebyshev(Mean, Sd) UCL	82.07

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.95	Mean	14.26
Maximum	25.5	Median	14.8
SD	8.145	Std. Error of Mean	3.325
Coefficient of Variation	0.571	Skewness	0.0776
Mean of logged Data	2.48	SD of logged Data	0.702

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.96	95% Adjusted-CLT UCL (Chen-1995)	19.84
		95% Modified-t UCL (Johnson-1978)	20.97

Nonparametric Distribution Free UCLs

95% CLT UCL	19.73	95% Jackknife UCL	20.96
95% Standard Bootstrap UCL	19.17	95% Bootstrap-t UCL	20.85
95% Hall's Bootstrap UCL	18.63	95% Percentile Bootstrap UCL	19.66
95% BCA Bootstrap UCL	19.17		
90% Chebyshev(Mean, Sd) UCL	24.23	95% Chebyshev(Mean, Sd) UCL	28.75
97.5% Chebyshev(Mean, Sd) UCL	35.02	99% Chebyshev(Mean, Sd) UCL	47.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.11	Mean	10.85
Maximum	20.4	Median	11.17
SD	6.371	Std. Error of Mean	2.601
Coefficient of Variation	0.587	Skewness	0.336

Mean of logged Data	2.207	SD of logged Data	0.695

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.09	95% Adjusted-CLT UCL (Chen-1995)	15.51
		95% Modified-t UCL (Johnson-1978)	16.15

Nonparametric Distribution Free UCLs

95% CLT UCL	15.13	95% Jackknife UCL	16.09
95% Standard Bootstrap UCL	14.76	95% Bootstrap-t UCL	16.71
95% Hall's Bootstrap UCL	14.99	95% Percentile Bootstrap UCL	14.83
95% BCA Bootstrap UCL	15.12		
90% Chebyshev(Mean, Sd) UCL	18.65	95% Chebyshev(Mean, Sd) UCL	22.19
97.5% Chebyshev(Mean, Sd) UCL	27.09	99% Chebyshev(Mean, Sd) UCL	36.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.58	Mean	18.96
Maximum	31.9	Median	20.35
SD	10.15	Std. Error of Mean	4.143
Coefficient of Variation	0.535	Skewness	-0.133
Mean of logged Data	2.784	SD of logged Data	0.665

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.31	95% Adjusted-CLT UCL (Chen-1995)	25.54
		95% Modified-t UCL (Johnson-1978)	27.27

Nonparametric Distribution Free UCLs

95% CLT UCL	25.78	95% Jackknife UCL	27.31
95% Standard Bootstrap UCL	25.37	95% Bootstrap-t UCL	27.17
95% Hall's Bootstrap UCL	24.46	95% Percentile Bootstrap UCL	24.98
95% BCA Bootstrap UCL	24.98		
90% Chebyshev(Mean, Sd) UCL	31.39	95% Chebyshev(Mean, Sd) UCL	37.02
97.5% Chebyshev(Mean, Sd) UCL	44.83	99% Chebyshev(Mean, Sd) UCL	60.18

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.88	Mean	5.188
Maximum	12.4	Median	3.778
SD	3.619	Std. Error of Mean	1.477
Coefficient of Variation	0.698	Skewness	2.206
Mean of logged Data	1.503	SD of logged Data	0.536

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.164	95% Adjusted-CLT UCL (Chen-1995)	9.039
		95% Modified-t UCL (Johnson-1978)	8.386

Nonparametric Distribution Free UCLs

95% CLT UCL	7.617	95% Jackknife UCL	8.164
95% Standard Bootstrap UCL	7.439	95% Bootstrap-t UCL	16.68
95% Hall's Bootstrap UCL	17.11	95% Percentile Bootstrap UCL	7.782
95% BCA Bootstrap UCL	8.29		
90% Chebyshev(Mean, Sd) UCL	9.619	95% Chebyshev(Mean, Sd) UCL	11.63
97.5% Chebyshev(Mean, Sd) UCL	14.41	99% Chebyshev(Mean, Sd) UCL	19.89

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.23	Mean	23.11
Maximum	32.2	Median	27.85
SD	10.94	Std. Error of Mean	4.468
Coefficient of Variation	0.474	Skewness	-0.823
Mean of logged Data	3.003	SD of logged Data	0.63

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.11	95% Adjusted-CLT UCL (Chen-1995)	28.85
		95% Modified-t UCL (Johnson-1978)	31.86

Nonparametric Distribution Free UCLs

95% CLT UCL	30.45	95% Jackknife UCL	32.11
95% Standard Bootstrap UCL	29.75	95% Bootstrap-t UCL	30.43
95% Hall's Bootstrap UCL	27.72	95% Percentile Bootstrap UCL	29.6
95% BCA Bootstrap UCL	28.25		
90% Chebyshev(Mean, Sd) UCL	36.51	95% Chebyshev(Mean, Sd) UCL	42.58
97.5% Chebyshev(Mean, Sd) UCL	51.01	99% Chebyshev(Mean, Sd) UCL	67.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.285	Mean	1.314
Maximum	1.33	Median	1.32
SD	0.0166	Std. Error of Mean	0.00676
Coefficient of Variation	0.0126	Skewness	-1.318
Mean of logged Data	0.273	SD of logged Data	0.0127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.328	95% Adjusted-CLT UCL (Chen-1995)	1.321
		95% Modified-t UCL (Johnson-1978)	1.327

Nonparametric Distribution Free UCLs

95% CLT UCL	1.325	95% Jackknife UCL	1.328
95% Standard Bootstrap UCL	1.324	95% Bootstrap-t UCL	1.324
95% Hall's Bootstrap UCL	1.322	95% Percentile Bootstrap UCL	1.323
95% BCA Bootstrap UCL	1.322		
90% Chebyshev(Mean, Sd) UCL	1.334	95% Chebyshev(Mean, Sd) UCL	1.344

97.5% Chebyshev(Mean, Sd) UCL	1.356	99% Chebyshev(Mean, Sd) UCL	1.381

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.53	Mean	15.22
Maximum	26.6	Median	15.65
SD	8.472	Std. Error of Mean	3.459
Coefficient of Variation	0.557	Skewness	0.0336
Mean of logged Data	2.557	SD of logged Data	0.676

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.19	95% Adjusted-CLT UCL (Chen-1995)	20.96
		95% Modified-t UCL (Johnson-1978)	22.2

Nonparametric Distribution Free UCLs

95% CLT UCL	20.91	95% Jackknife UCL	22.19
95% Standard Bootstrap UCL	20.4	95% Bootstrap-t UCL	22.22
95% Hall's Bootstrap UCL	20.13	95% Percentile Bootstrap UCL	20.42
95% BCA Bootstrap UCL	20.25		
90% Chebyshev(Mean, Sd) UCL	25.6	95% Chebyshev(Mean, Sd) UCL	30.3
97.5% Chebyshev(Mean, Sd) UCL	36.82	99% Chebyshev(Mean, Sd) UCL	49.64

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.11	Mean	1.895
Maximum	3.27	Median	1.685
SD	0.851	Std. Error of Mean	0.347

Coefficient of Variation	0.449	Skewness	0.867
Mean of logged Data	0.559	SD of logged Data	0.435

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.595	95% Adjusted-CLT UCL (Chen-1995)	2.597
		95% Modified-t UCL (Johnson-1978)	2.615

Nonparametric Distribution Free UCLs

95% CLT UCL	2.466	95% Jackknife UCL	2.595
95% Standard Bootstrap UCL	2.397	95% Bootstrap-t UCL	3.24
95% Hall's Bootstrap UCL	2.788	95% Percentile Bootstrap UCL	2.472
95% BCA Bootstrap UCL	2.472		
90% Chebyshev(Mean, Sd) UCL	2.937	95% Chebyshev(Mean, Sd) UCL	3.409
97.5% Chebyshev(Mean, Sd) UCL	4.063	99% Chebyshev(Mean, Sd) UCL	5.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.61	Mean	8.883
Maximum	12	Median	11.25
SD	4.184	Std. Error of Mean	1.708
Coefficient of Variation	0.471	Skewness	-1.035
Mean of logged Data	2.041	SD of logged Data	0.651

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.32	95% Adjusted-CLT UCL (Chen-1995)	10.92
		95% Modified-t UCL (Johnson-1978)	12.2

Nonparametric Distribution Free UCLs

95% CLT UCL	11.69	95% Jackknife UCL	12.32
95% Standard Bootstrap UCL	11.48	95% Bootstrap-t UCL	11.63
95% Hall's Bootstrap UCL	10.58	95% Percentile Bootstrap UCL	11.52
95% BCA Bootstrap UCL	11.4		
90% Chebyshev(Mean, Sd) UCL	14.01	95% Chebyshev(Mean, Sd) UCL	16.33
97.5% Chebyshev(Mean, Sd) UCL	19.55	99% Chebyshev(Mean, Sd) UCL	25.88

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	16.33

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.22	Mean	23.77
Maximum	34	Median	27.95
SD	11.48	Std. Error of Mean	4.689
Coefficient of Variation	0.483	Skewness	-0.688
Mean of logged Data	3.028	SD of logged Data	0.637

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.22	95% Adjusted-CLT UCL (Chen-1995)	30.07
		95% Modified-t UCL (Johnson-1978)	33

Nonparametric Distribution Free UCLs

95% CLT UCL	31.48	95% Jackknife UCL	33.22
95% Standard Bootstrap UCL	30.83	95% Bootstrap-t UCL	31.53
95% Hall's Bootstrap UCL	28.85	95% Percentile Bootstrap UCL	30.35
95% BCA Bootstrap UCL	29.58		
90% Chebyshev(Mean, Sd) UCL	37.84	95% Chebyshev(Mean, Sd) UCL	44.21
97.5% Chebyshev(Mean, Sd) UCL	53.05	99% Chebyshev(Mean, Sd) UCL	70.42

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:41:06 AM
From File	21078D.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	11.98
Maximum	13.1	Median	11.75
SD	0.866	Std. Error of Mean	0.353
Coefficient of Variation	0.0723	Skewness	0.194
Mean of logged Data	2.481	SD of logged Data	0.0721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.7	95% Adjusted-CLT UCL (Chen-1995)	12.59
		95% Modified-t UCL (Johnson-1978)	12.7

Nonparametric Distribution Free UCLs

95% CLT UCL	12.56	95% Jackknife UCL	12.7
95% Standard Bootstrap UCL	12.52	95% Bootstrap-t UCL	13.05
95% Hall's Bootstrap UCL	13.76	95% Percentile Bootstrap UCL	12.57
95% BCA Bootstrap UCL	12.57		
90% Chebyshev(Mean, Sd) UCL	13.04	95% Chebyshev(Mean, Sd) UCL	13.52
97.5% Chebyshev(Mean, Sd) UCL	14.19	99% Chebyshev(Mean, Sd) UCL	15.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15	Mean	72.65
Maximum	191	Median	54.7
SD	63.49	Std. Error of Mean	25.92
Coefficient of Variation	0.874	Skewness	1.614
Mean of logged Data	3.978	SD of logged Data	0.878

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	124.9	95% Adjusted-CLT UCL (Chen-1995)	133.5
		95% Modified-t UCL (Johnson-1978)	127.7

Nonparametric Distribution Free UCLs

95% CLT UCL	115.3	95% Jackknife UCL	124.9
95% Standard Bootstrap UCL	110.9	95% Bootstrap-t UCL	190.7
95% Hall's Bootstrap UCL	310.1	95% Percentile Bootstrap UCL	115.3
95% BCA Bootstrap UCL	122.8		
90% Chebyshev(Mean, Sd) UCL	150.4	95% Chebyshev(Mean, Sd) UCL	185.6
97.5% Chebyshev(Mean, Sd) UCL	234.5	99% Chebyshev(Mean, Sd) UCL	330.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.5	Mean	45.82
Maximum	48.2	Median	46.5
SD	2.717	Std. Error of Mean	1.109
Coefficient of Variation	0.0593	Skewness	-1.994
Mean of logged Data	3.823	SD of logged Data	0.0619

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.05	95% Adjusted-CLT UCL (Chen-1995)	46.68
		95% Modified-t UCL (Johnson-1978)	47.9

Nonparametric Distribution Free UCLs

95% CLT UCL	47.64	95% Jackknife UCL	48.05
95% Standard Bootstrap UCL	47.49	95% Bootstrap-t UCL	47.26
95% Hall's Bootstrap UCL	46.94	95% Percentile Bootstrap UCL	47.2
95% BCA Bootstrap UCL	47.02		
90% Chebyshev(Mean, Sd) UCL	49.14	95% Chebyshev(Mean, Sd) UCL	50.65
97.5% Chebyshev(Mean, Sd) UCL	52.74	99% Chebyshev(Mean, Sd) UCL	56.85

Suggested UCL to Use

95% Student's-t UCL	48.05	or 95% Modified-t UCL	47.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.71	Mean	0.932
Maximum	1.81	Median	0.769
SD	0.432	Std. Error of Mean	0.176
Coefficient of Variation	0.463	Skewness	2.413
Mean of logged Data	-0.135	SD of logged Data	0.36

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.287	95% Adjusted-CLT UCL (Chen-1995)	1.407
		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.222	95% Jackknife UCL	1.287
95% Standard Bootstrap UCL	1.197	95% Bootstrap-t UCL	3.622
95% Hall's Bootstrap UCL	3.273	95% Percentile Bootstrap UCL	1.275
95% BCA Bootstrap UCL	1.295		
90% Chebyshev(Mean, Sd) UCL	1.461	95% Chebyshev(Mean, Sd) UCL	1.7
97.5% Chebyshev(Mean, Sd) UCL	2.032	99% Chebyshev(Mean, Sd) UCL	2.685

Suggested UCL to Use

95% Student's-t UCL	1.287	or 95% Modified-t UCL	1.316

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.505	Mean	0.772
Maximum	1.16	Median	0.734
SD	0.291	Std. Error of Mean	0.119
Coefficient of Variation	0.377	Skewness	0.269
Mean of logged Data	-0.32	SD of logged Data	0.384

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.011	95% Adjusted-CLT UCL (Chen-1995)	0.981
		95% Modified-t UCL (Johnson-1978)	1.013

Nonparametric Distribution Free UCLs

95% CLT UCL	0.967	95% Jackknife UCL	1.011
95% Standard Bootstrap UCL	0.947	95% Bootstrap-t UCL	1.045
95% Hall's Bootstrap UCL	0.887	95% Percentile Bootstrap UCL	0.955
95% BCA Bootstrap UCL	0.957		
90% Chebyshev(Mean, Sd) UCL	1.128	95% Chebyshev(Mean, Sd) UCL	1.29
97.5% Chebyshev(Mean, Sd) UCL	1.514	99% Chebyshev(Mean, Sd) UCL	1.954

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.06	Mean	2.448
Maximum	3.09	Median	2.36
SD	0.422	Std. Error of Mean	0.172
Coefficient of Variation	0.173	Skewness	0.622
Mean of logged Data	0.883	SD of logged Data	0.169

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.796	95% Adjusted-CLT UCL (Chen-1995)	2.779
		95% Modified-t UCL (Johnson-1978)	2.803

Nonparametric Distribution Free UCLs

95% CLT UCL	2.732	95% Jackknife UCL	2.796
95% Standard Bootstrap UCL	2.71	95% Bootstrap-t UCL	3.022
95% Hall's Bootstrap UCL	2.695	95% Percentile Bootstrap UCL	2.717
95% BCA Bootstrap UCL	2.743		
90% Chebyshev(Mean, Sd) UCL	2.966	95% Chebyshev(Mean, Sd) UCL	3.2
97.5% Chebyshev(Mean, Sd) UCL	3.525	99% Chebyshev(Mean, Sd) UCL	4.164

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5	Mean	18.09
Maximum	32.1	Median	17.87
SD	13.15	Std. Error of Mean	5.369
Coefficient of Variation	0.727	Skewness	0.0212
Mean of logged Data	2.601	SD of logged Data	0.889

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.91	95% Adjusted-CLT UCL (Chen-1995)	26.97
		95% Modified-t UCL (Johnson-1978)	28.92

Nonparametric Distribution Free UCLs

95% CLT UCL	26.92	95% Jackknife UCL	28.91
95% Standard Bootstrap UCL	26.35	95% Bootstrap-t UCL	29.01
95% Hall's Bootstrap UCL	22.65	95% Percentile Bootstrap UCL	26.36
95% BCA Bootstrap UCL	26.15		
90% Chebyshev(Mean, Sd) UCL	34.2	95% Chebyshev(Mean, Sd) UCL	41.5
97.5% Chebyshev(Mean, Sd) UCL	51.62	99% Chebyshev(Mean, Sd) UCL	71.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.84	Mean	23.95
Maximum	41.7	Median	23.35
SD	17.69	Std. Error of Mean	7.222
Coefficient of Variation	0.739	Skewness	0.0179
Mean of logged Data	2.872	SD of logged Data	0.901

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	38.5	95% Adjusted-CLT UCL (Chen-1995)	35.89
		95% Modified-t UCL (Johnson-1978)	38.51

Nonparametric Distribution Free UCLs

95% CLT UCL	35.83	95% Jackknife UCL	38.5
95% Standard Bootstrap UCL	34.78	95% Bootstrap-t UCL	39.75
95% Hall's Bootstrap UCL	29.95	95% Percentile Bootstrap UCL	34.92
95% BCA Bootstrap UCL	34.75		
90% Chebyshev(Mean, Sd) UCL	45.62	95% Chebyshev(Mean, Sd) UCL	55.43
97.5% Chebyshev(Mean, Sd) UCL	69.05	99% Chebyshev(Mean, Sd) UCL	95.81

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.1	Mean	34.37
Maximum	58.3	Median	34.25
SD	24.63	Std. Error of Mean	10.05
Coefficient of Variation	0.717	Skewness	0.00147
Mean of logged Data	3.254	SD of logged Data	0.867

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	54.63	95% Adjusted-CLT UCL (Chen-1995)	50.91
		95% Modified-t UCL (Johnson-1978)	54.63

Nonparametric Distribution Free UCLs

95% CLT UCL	50.9	95% Jackknife UCL	54.63
95% Standard Bootstrap UCL	49.92	95% Bootstrap-t UCL	54.22
95% Hall's Bootstrap UCL	42.52	95% Percentile Bootstrap UCL	49.5
95% BCA Bootstrap UCL	49.5		
90% Chebyshev(Mean, Sd) UCL	64.53	95% Chebyshev(Mean, Sd) UCL	78.19
97.5% Chebyshev(Mean, Sd) UCL	97.15	99% Chebyshev(Mean, Sd) UCL	134.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.41	Mean	18.19
Maximum	30.5	Median	18.63
SD	12.67	Std. Error of Mean	5.174
Coefficient of Variation	0.697	Skewness	-0.0202
Mean of logged Data	2.634	SD of logged Data	0.844

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.61	95% Adjusted-CLT UCL (Chen-1995)	26.65
		95% Modified-t UCL (Johnson-1978)	28.61

Nonparametric Distribution Free UCLs

95% CLT UCL	26.7	95% Jackknife UCL	28.61
95% Standard Bootstrap UCL	26.02	95% Bootstrap-t UCL	28.52
95% Hall's Bootstrap UCL	22.46	95% Percentile Bootstrap UCL	25.93
95% BCA Bootstrap UCL	26.06		
90% Chebyshev(Mean, Sd) UCL	33.71	95% Chebyshev(Mean, Sd) UCL	40.74
97.5% Chebyshev(Mean, Sd) UCL	50.5	99% Chebyshev(Mean, Sd) UCL	69.67

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.61	Mean	12.61
Maximum	21.9	Median	13.11
SD	8.59	Std. Error of Mean	3.507
Coefficient of Variation	0.681	Skewness	-0.0285
Mean of logged Data	2.276	SD of logged Data	0.837

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.67	95% Adjusted-CLT UCL (Chen-1995)	18.33
		95% Modified-t UCL (Johnson-1978)	19.67

Nonparametric Distribution Free UCLs

95% CLT UCL	18.38	95% Jackknife UCL	19.67
95% Standard Bootstrap UCL	17.82	95% Bootstrap-t UCL	20.02
95% Hall's Bootstrap UCL	15.79	95% Percentile Bootstrap UCL	17.85
95% BCA Bootstrap UCL	17.74		
90% Chebyshev(Mean, Sd) UCL	23.13	95% Chebyshev(Mean, Sd) UCL	27.89
97.5% Chebyshev(Mean, Sd) UCL	34.51	99% Chebyshev(Mean, Sd) UCL	47.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.64	Mean	24.43
Maximum	42	Median	24.65
SD	17.67	Std. Error of Mean	7.214
Coefficient of Variation	0.723	Skewness	-0.00584
Mean of logged Data	2.904	SD of logged Data	0.884

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	38.96	95% Adjusted-CLT UCL (Chen-1995)	36.28
		95% Modified-t UCL (Johnson-1978)	38.96

Nonparametric Distribution Free UCLs

95% CLT UCL	36.29	95% Jackknife UCL	38.96
95% Standard Bootstrap UCL	35.19	95% Bootstrap-t UCL	39.37
95% Hall's Bootstrap UCL	30.34	95% Percentile Bootstrap UCL	35.36
95% BCA Bootstrap UCL	35.36		
90% Chebyshev(Mean, Sd) UCL	46.07	95% Chebyshev(Mean, Sd) UCL	55.87
97.5% Chebyshev(Mean, Sd) UCL	69.48	99% Chebyshev(Mean, Sd) UCL	96.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	5.885
Maximum	8.15	Median	6.41
SD	2.383	Std. Error of Mean	0.973
Coefficient of Variation	0.405	Skewness	-0.286
Mean of logged Data	1.693	SD of logged Data	0.452

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.845	95% Adjusted-CLT UCL (Chen-1995)	7.364
		95% Modified-t UCL (Johnson-1978)	7.826

Nonparametric Distribution Free UCLs

95% CLT UCL	7.485	95% Jackknife UCL	7.845
95% Standard Bootstrap UCL	7.318	95% Bootstrap-t UCL	7.726
95% Hall's Bootstrap UCL	6.908	95% Percentile Bootstrap UCL	7.256
95% BCA Bootstrap UCL	7.229		
90% Chebyshev(Mean, Sd) UCL	8.803	95% Chebyshev(Mean, Sd) UCL	10.13
97.5% Chebyshev(Mean, Sd) UCL	11.96	99% Chebyshev(Mean, Sd) UCL	15.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.59	Mean	30.57
Maximum	52.9	Median	30
SD	22.72	Std. Error of Mean	9.276
Coefficient of Variation	0.743	Skewness	0.00703
Mean of logged Data	3.11	SD of logged Data	0.908

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.26	95% Adjusted-CLT UCL (Chen-1995)	45.85
		95% Modified-t UCL (Johnson-1978)	49.26

Nonparametric Distribution Free UCLs

95% CLT UCL	45.82	95% Jackknife UCL	49.26
95% Standard Bootstrap UCL	44.72	95% Bootstrap-t UCL	49.01
95% Hall's Bootstrap UCL	38.01	95% Percentile Bootstrap UCL	44.3
95% BCA Bootstrap UCL	44.7		
90% Chebyshev(Mean, Sd) UCL	58.39	95% Chebyshev(Mean, Sd) UCL	71
97.5% Chebyshev(Mean, Sd) UCL	88.49	99% Chebyshev(Mean, Sd) UCL	122.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.26	Mean	1.289
Maximum	1.33	Median	1.275
SD	0.0322	Std. Error of Mean	0.0131
Coefficient of Variation	0.0249	Skewness	0.826
Mean of logged Data	0.254	SD of logged Data	0.0248

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.316	95% Adjusted-CLT UCL (Chen-1995)	1.315
		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.311	95% Jackknife UCL	1.316
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.329	95% Chebyshev(Mean, Sd) UCL	1.346
97.5% Chebyshev(Mean, Sd) UCL	1.371	99% Chebyshev(Mean, Sd) UCL	1.42

Suggested UCL to Use

95% Student's-t UCL	1.316	or 95% Modified-t UCL	1.316

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.81	Mean	20.11
Maximum	35.2	Median	19.76
SD	14.04	Std. Error of Mean	5.732
Coefficient of Variation	0.698	Skewness	0.0262
Mean of logged Data	2.737	SD of logged Data	0.839

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.66	95% Adjusted-CLT UCL (Chen-1995)	29.61
		95% Modified-t UCL (Johnson-1978)	31.67

Nonparametric Distribution Free UCLs

95% CLT UCL	29.54	95% Jackknife UCL	31.66
95% Standard Bootstrap UCL	28.71	95% Bootstrap-t UCL	32.09
95% Hall's Bootstrap UCL	25.15	95% Percentile Bootstrap UCL	28.96
95% BCA Bootstrap UCL	28.96		
90% Chebyshev(Mean, Sd) UCL	37.31	95% Chebyshev(Mean, Sd) UCL	45.1
97.5% Chebyshev(Mean, Sd) UCL	55.91	99% Chebyshev(Mean, Sd) UCL	77.15

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.995	Mean	1.344
Maximum	1.67	Median	1.335
SD	0.306	Std. Error of Mean	0.125
Coefficient of Variation	0.228	Skewness	0.0226
Mean of logged Data	0.274	SD of logged Data	0.232

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.596	95% Adjusted-CLT UCL (Chen-1995)	1.551
		95% Modified-t UCL (Johnson-1978)	1.596

Nonparametric Distribution Free UCLs

95% CLT UCL	1.55	95% Jackknife UCL	1.596
95% Standard Bootstrap UCL	1.53	95% Bootstrap-t UCL	1.564
95% Hall's Bootstrap UCL	1.483	95% Percentile Bootstrap UCL	1.53
95% BCA Bootstrap UCL	1.529		
90% Chebyshev(Mean, Sd) UCL	1.72	95% Chebyshev(Mean, Sd) UCL	1.89
97.5% Chebyshev(Mean, Sd) UCL	2.126	99% Chebyshev(Mean, Sd) UCL	2.589

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.45	Mean	11.43
Maximum	19.7	Median	11.08
SD	8.29	Std. Error of Mean	3.384
Coefficient of Variation	0.725	Skewness	0.0193
Mean of logged Data	2.147	SD of logged Data	0.874

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.25	95% Adjusted-CLT UCL (Chen-1995)	17.02
		95% Modified-t UCL (Johnson-1978)	18.25

Nonparametric Distribution Free UCLs

95% CLT UCL	16.99	95% Jackknife UCL	18.25
95% Standard Bootstrap UCL	16.58	95% Bootstrap-t UCL	18.07
95% Hall's Bootstrap UCL	14.21	95% Percentile Bootstrap UCL	16.58
95% BCA Bootstrap UCL	16.58		
90% Chebyshev(Mean, Sd) UCL	21.58	95% Chebyshev(Mean, Sd) UCL	26.18
97.5% Chebyshev(Mean, Sd) UCL	32.56	99% Chebyshev(Mean, Sd) UCL	45.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.72	Mean	32.17
Maximum	55.6	Median	31.7
SD	24.14	Std. Error of Mean	9.853
Coefficient of Variation	0.75	Skewness	0.00389
Mean of logged Data	3.153	SD of logged Data	0.923

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.03	95% Adjusted-CLT UCL (Chen-1995)	48.39
		95% Modified-t UCL (Johnson-1978)	52.03

Nonparametric Distribution Free UCLs

95% CLT UCL	48.38	95% Jackknife UCL	52.03
95% Standard Bootstrap UCL	47.16	95% Bootstrap-t UCL	51.87
95% Hall's Bootstrap UCL	40.12	95% Percentile Bootstrap UCL	47.08
95% BCA Bootstrap UCL	46.77		
90% Chebyshev(Mean, Sd) UCL	61.73	95% Chebyshev(Mean, Sd) UCL	75.12
97.5% Chebyshev(Mean, Sd) UCL	93.7	99% Chebyshev(Mean, Sd) UCL	130.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:42:22 AM
From File	21078E.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.1	Mean	15.9
Maximum	17.5	Median	16.05
SD	1.517	Std. Error of Mean	0.619
Coefficient of Variation	0.0954	Skewness	-0.147
Mean of logged Data	2.762	SD of logged Data	0.0962

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.15	95% Adjusted-CLT UCL (Chen-1995)	16.88
		95% Modified-t UCL (Johnson-1978)	17.14

Nonparametric Distribution Free UCLs

95% CLT UCL	16.92	95% Jackknife UCL	17.15
95% Standard Bootstrap UCL	16.82	95% Bootstrap-t UCL	17.14
95% Hall's Bootstrap UCL	16.53	95% Percentile Bootstrap UCL	16.82
95% BCA Bootstrap UCL	16.85		
90% Chebyshev(Mean, Sd) UCL	17.76	95% Chebyshev(Mean, Sd) UCL	18.6
97.5% Chebyshev(Mean, Sd) UCL	19.77	99% Chebyshev(Mean, Sd) UCL	22.06

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.6	Mean	58.95
Maximum	151	Median	37.2
SD	48.99	Std. Error of Mean	20
Coefficient of Variation	0.831	Skewness	1.748

Mean of logged Data	3.84	SD of logged Data	0.719

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	99.25	95% Adjusted-CLT UCL (Chen-1995)	107.1
		95% Modified-t UCL (Johnson-1978)	101.6

Nonparametric Distribution Free UCLs

95% CLT UCL	91.85	95% Jackknife UCL	99.25
95% Standard Bootstrap UCL	88.94	95% Bootstrap-t UCL	234.8
95% Hall's Bootstrap UCL	304.8	95% Percentile Bootstrap UCL	89.68
95% BCA Bootstrap UCL	106.2		
90% Chebyshev(Mean, Sd) UCL	118.9	95% Chebyshev(Mean, Sd) UCL	146.1
97.5% Chebyshev(Mean, Sd) UCL	183.8	99% Chebyshev(Mean, Sd) UCL	257.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	52.3	Mean	56.9
Maximum	61.4	Median	56.95
SD	3.584	Std. Error of Mean	1.463
Coefficient of Variation	0.063	Skewness	-0.0358
Mean of logged Data	4.04	SD of logged Data	0.0632

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.85	95% Adjusted-CLT UCL (Chen-1995)	59.28
		95% Modified-t UCL (Johnson-1978)	59.84

Nonparametric Distribution Free UCLs

95% CLT UCL	59.31	95% Jackknife UCL	59.85
95% Standard Bootstrap UCL	59.11	95% Bootstrap-t UCL	59.83
95% Hall's Bootstrap UCL	58.82	95% Percentile Bootstrap UCL	59.13
95% BCA Bootstrap UCL	58.93		
90% Chebyshev(Mean, Sd) UCL	61.29	95% Chebyshev(Mean, Sd) UCL	63.28
97.5% Chebyshev(Mean, Sd) UCL	66.04	99% Chebyshev(Mean, Sd) UCL	71.46

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.93	Mean	1.04
Maximum	1.18	Median	1.02
SD	0.102	Std. Error of Mean	0.0416
Coefficient of Variation	0.0981	Skewness	0.372
Mean of logged Data	0.0353	SD of logged Data	0.0973

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.124	95% Adjusted-CLT UCL (Chen-1995)	1.115
		95% Modified-t UCL (Johnson-1978)	1.125

Nonparametric Distribution Free UCLs

95% CLT UCL	1.108	95% Jackknife UCL	1.124
95% Standard Bootstrap UCL	1.104	95% Bootstrap-t UCL	1.172
95% Hall's Bootstrap UCL	1.093	95% Percentile Bootstrap UCL	1.102
95% BCA Bootstrap UCL	1.1		
90% Chebyshev(Mean, Sd) UCL	1.165	95% Chebyshev(Mean, Sd) UCL	1.221
97.5% Chebyshev(Mean, Sd) UCL	1.3	99% Chebyshev(Mean, Sd) UCL	1.454

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.495	Mean	0.684
Maximum	0.952	Median	0.665
SD	0.201	Std. Error of Mean	0.082
Coefficient of Variation	0.294	Skewness	0.256
Mean of logged Data	-0.416	SD of logged Data	0.295

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.85	95% Adjusted-CLT UCL (Chen-1995)	0.828
		95% Modified-t UCL (Johnson-1978)	0.851

Nonparametric Distribution Free UCLs

95% CLT UCL	0.819	95% Jackknife UCL	0.85
95% Standard Bootstrap UCL	0.807	95% Bootstrap-t UCL	0.882
95% Hall's Bootstrap UCL	0.764	95% Percentile Bootstrap UCL	0.811
95% BCA Bootstrap UCL	0.811		
90% Chebyshev(Mean, Sd) UCL	0.93	95% Chebyshev(Mean, Sd) UCL	1.042
97.5% Chebyshev(Mean, Sd) UCL	1.196	99% Chebyshev(Mean, Sd) UCL	1.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.01	Mean	2.253
Maximum	2.99	Median	2.1
SD	0.369	Std. Error of Mean	0.15
Coefficient of Variation	0.164	Skewness	2.235
Mean of logged Data	0.803	SD of logged Data	0.148

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.557	95% Adjusted-CLT UCL (Chen-1995)	2.648
		95% Modified-t UCL (Johnson-1978)	2.579

Nonparametric Distribution Free UCLs

95% CLT UCL	2.501	95% Jackknife UCL	2.557
95% Standard Bootstrap UCL	2.481	95% Bootstrap-t UCL	4.01
95% Hall's Bootstrap UCL	4.203	95% Percentile Bootstrap UCL	2.527
95% BCA Bootstrap UCL	2.568		
90% Chebyshev(Mean, Sd) UCL	2.705	95% Chebyshev(Mean, Sd) UCL	2.909
97.5% Chebyshev(Mean, Sd) UCL	3.193	99% Chebyshev(Mean, Sd) UCL	3.75

Suggested UCL to Use

95% Student's-t UCL	2.557	or 95% Modified-t UCL	2.579

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.97	Mean	15.43
Maximum	30.4	Median	14.47
SD	12.29	Std. Error of Mean	5.018
Coefficient of Variation	0.796	Skewness	0.131
Mean of logged Data	2.373	SD of logged Data	0.991

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.54	95% Adjusted-CLT UCL (Chen-1995)	23.98
		95% Modified-t UCL (Johnson-1978)	25.59

Nonparametric Distribution Free UCLs

95% CLT UCL	23.69	95% Jackknife UCL	25.54
95% Standard Bootstrap UCL	22.8	95% Bootstrap-t UCL	26.66
95% Hall's Bootstrap UCL	19.81	95% Percentile Bootstrap UCL	23.16
95% BCA Bootstrap UCL	23.12		
90% Chebyshev(Mean, Sd) UCL	30.49	95% Chebyshev(Mean, Sd) UCL	37.31
97.5% Chebyshev(Mean, Sd) UCL	46.77	99% Chebyshev(Mean, Sd) UCL	65.36

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.27	Mean	20.04
Maximum	40.4	Median	18.24
SD	15.8	Std. Error of Mean	6.452
Coefficient of Variation	0.788	Skewness	0.209
Mean of logged Data	2.653	SD of logged Data	0.959

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.04	95% Adjusted-CLT UCL (Chen-1995)	31.24
		95% Modified-t UCL (Johnson-1978)	33.14

Nonparametric Distribution Free UCLs

95% CLT UCL	30.66	95% Jackknife UCL	33.04
95% Standard Bootstrap UCL	29.7	95% Bootstrap-t UCL	34.7
95% Hall's Bootstrap UCL	25.98	95% Percentile Bootstrap UCL	29.48
95% BCA Bootstrap UCL	30.01		
90% Chebyshev(Mean, Sd) UCL	39.4	95% Chebyshev(Mean, Sd) UCL	48.17
97.5% Chebyshev(Mean, Sd) UCL	60.33	99% Chebyshev(Mean, Sd) UCL	84.24

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.39	Mean	28.67
Maximum	58.6	Median	26.67
SD	23.04	Std. Error of Mean	9.408
Coefficient of Variation	0.804	Skewness	0.215
Mean of logged Data	2.992	SD of logged Data	0.987

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.63	95% Adjusted-CLT UCL (Chen-1995)	45.03
		95% Modified-t UCL (Johnson-1978)	47.77

Nonparametric Distribution Free UCLs

95% CLT UCL	44.15	95% Jackknife UCL	47.63
95% Standard Bootstrap UCL	42.74	95% Bootstrap-t UCL	51.12
95% Hall's Bootstrap UCL	37.41	95% Percentile Bootstrap UCL	43.14
95% BCA Bootstrap UCL	43.14		
90% Chebyshev(Mean, Sd) UCL	56.89	95% Chebyshev(Mean, Sd) UCL	69.68
97.5% Chebyshev(Mean, Sd) UCL	87.42	99% Chebyshev(Mean, Sd) UCL	122.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.6	Mean	13.52
Maximum	27.1	Median	12.41
SD	10.7	Std. Error of Mean	4.369
Coefficient of Variation	0.792	Skewness	0.185
Mean of logged Data	2.253	SD of logged Data	0.968

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.32	95% Adjusted-CLT UCL (Chen-1995)	21.06
		95% Modified-t UCL (Johnson-1978)	22.38

Nonparametric Distribution Free UCLs

95% CLT UCL	20.7	95% Jackknife UCL	22.32
95% Standard Bootstrap UCL	20.17	95% Bootstrap-t UCL	24.21
95% Hall's Bootstrap UCL	17.45	95% Percentile Bootstrap UCL	20.27
95% BCA Bootstrap UCL	20.27		
90% Chebyshev(Mean, Sd) UCL	26.63	95% Chebyshev(Mean, Sd) UCL	32.56
97.5% Chebyshev(Mean, Sd) UCL	40.8	99% Chebyshev(Mean, Sd) UCL	56.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.76	Mean	10.57
Maximum	19.9	Median	9.38
SD	8.326	Std. Error of Mean	3.399
Coefficient of Variation	0.788	Skewness	0.127
Mean of logged Data	2.006	SD of logged Data	0.971

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.41	95% Adjusted-CLT UCL (Chen-1995)	16.34
		95% Modified-t UCL (Johnson-1978)	17.44

Nonparametric Distribution Free UCLs

95% CLT UCL	16.16	95% Jackknife UCL	17.41
95% Standard Bootstrap UCL	15.73	95% Bootstrap-t UCL	16.99
95% Hall's Bootstrap UCL	13.5	95% Percentile Bootstrap UCL	15.83
95% BCA Bootstrap UCL	15.4		
90% Chebyshev(Mean, Sd) UCL	20.76	95% Chebyshev(Mean, Sd) UCL	25.38
97.5% Chebyshev(Mean, Sd) UCL	31.79	99% Chebyshev(Mean, Sd) UCL	44.39

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.05	Mean	21.01
Maximum	41.8	Median	19.8
SD	16.96	Std. Error of Mean	6.925
Coefficient of Variation	0.807	Skewness	0.136
Mean of logged Data	2.667	SD of logged Data	1.012

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	34.96	95% Adjusted-CLT UCL (Chen-1995)	32.81
		95% Modified-t UCL (Johnson-1978)	35.03

Nonparametric Distribution Free UCLs

95% CLT UCL	32.4	95% Jackknife UCL	34.96
95% Standard Bootstrap UCL	31.28	95% Bootstrap-t UCL	36.76
95% Hall's Bootstrap UCL	27.06	95% Percentile Bootstrap UCL	31.69
95% BCA Bootstrap UCL	31.68		
90% Chebyshev(Mean, Sd) UCL	41.78	95% Chebyshev(Mean, Sd) UCL	51.19
97.5% Chebyshev(Mean, Sd) UCL	64.26	99% Chebyshev(Mean, Sd) UCL	89.91

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.09	Mean	4.539
Maximum	6.88	Median	4.275
SD	1.592	Std. Error of Mean	0.65
Coefficient of Variation	0.351	Skewness	0.486
Mean of logged Data	1.462	SD of logged Data	0.349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.849	95% Adjusted-CLT UCL (Chen-1995)	5.746
		95% Modified-t UCL (Johnson-1978)	5.87

Nonparametric Distribution Free UCLs

95% CLT UCL	5.608	95% Jackknife UCL	5.849
95% Standard Bootstrap UCL	5.532	95% Bootstrap-t UCL	6.346
95% Hall's Bootstrap UCL	5.3	95% Percentile Bootstrap UCL	5.553
95% BCA Bootstrap UCL	5.658		
90% Chebyshev(Mean, Sd) UCL	6.489	95% Chebyshev(Mean, Sd) UCL	7.372
97.5% Chebyshev(Mean, Sd) UCL	8.598	99% Chebyshev(Mean, Sd) UCL	11.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.11	Mean	27.85
Maximum	56.3	Median	25.6
SD	22.22	Std. Error of Mean	9.071
Coefficient of Variation	0.798	Skewness	0.198
Mean of logged Data	2.968	SD of logged Data	0.982

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.13	95% Adjusted-CLT UCL (Chen-1995)	43.56
		95% Modified-t UCL (Johnson-1978)	46.25

Nonparametric Distribution Free UCLs

95% CLT UCL	42.77	95% Jackknife UCL	46.13
95% Standard Bootstrap UCL	41.32	95% Bootstrap-t UCL	48.39
95% Hall's Bootstrap UCL	36.18	95% Percentile Bootstrap UCL	41.73
95% BCA Bootstrap UCL	41.42		
90% Chebyshev(Mean, Sd) UCL	55.07	95% Chebyshev(Mean, Sd) UCL	67.39
97.5% Chebyshev(Mean, Sd) UCL	84.5	99% Chebyshev(Mean, Sd) UCL	118.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.2	Mean	1.272
Maximum	1.315	Median	1.285
SD	0.0452	Std. Error of Mean	0.0185
Coefficient of Variation	0.0356	Skewness	-0.884
Mean of logged Data	0.24	SD of logged Data	0.036

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.309	95% Adjusted-CLT UCL (Chen-1995)	1.295
		95% Modified-t UCL (Johnson-1978)	1.308

Nonparametric Distribution Free UCLs

95% CLT UCL	1.302	95% Jackknife UCL	1.309
95% Standard Bootstrap UCL	1.299	95% Bootstrap-t UCL	1.304
95% Hall's Bootstrap UCL	1.292	95% Percentile Bootstrap UCL	1.298
95% BCA Bootstrap UCL	1.295		
90% Chebyshev(Mean, Sd) UCL	1.327	95% Chebyshev(Mean, Sd) UCL	1.352
97.5% Chebyshev(Mean, Sd) UCL	1.387	99% Chebyshev(Mean, Sd) UCL	1.455

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.18	Mean	16.08
Maximum	30.7	Median	15.04
SD	11.56	Std. Error of Mean	4.718
Coefficient of Variation	0.718	Skewness	0.177
Mean of logged Data	2.508	SD of logged Data	0.839

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.59	95% Adjusted-CLT UCL (Chen-1995)	24.21
		95% Modified-t UCL (Johnson-1978)	25.65

Nonparametric Distribution Free UCLs

95% CLT UCL	23.84	95% Jackknife UCL	25.59
95% Standard Bootstrap UCL	23.07	95% Bootstrap-t UCL	26.8
95% Hall's Bootstrap UCL	20.39	95% Percentile Bootstrap UCL	23.41
95% BCA Bootstrap UCL	23.41		
90% Chebyshev(Mean, Sd) UCL	30.24	95% Chebyshev(Mean, Sd) UCL	36.65
97.5% Chebyshev(Mean, Sd) UCL	45.54	99% Chebyshev(Mean, Sd) UCL	63.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.93	Mean	1.743
Maximum	2.81	Median	1.655
SD	0.879	Std. Error of Mean	0.359
Coefficient of Variation	0.504	Skewness	0.131
Mean of logged Data	0.439	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.467	95% Adjusted-CLT UCL (Chen-1995)	2.354
		95% Modified-t UCL (Johnson-1978)	2.47

Nonparametric Distribution Free UCLs

95% CLT UCL	2.334	95% Jackknife UCL	2.467
95% Standard Bootstrap UCL	2.278	95% Bootstrap-t UCL	2.526
95% Hall's Bootstrap UCL	2.051	95% Percentile Bootstrap UCL	2.298
95% BCA Bootstrap UCL	2.298		
90% Chebyshev(Mean, Sd) UCL	2.82	95% Chebyshev(Mean, Sd) UCL	3.308
97.5% Chebyshev(Mean, Sd) UCL	3.985	99% Chebyshev(Mean, Sd) UCL	5.315

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.75	Mean	11.39
Maximum	23.3	Median	10.37
SD	9.237	Std. Error of Mean	3.771
Coefficient of Variation	0.811	Skewness	0.211
Mean of logged Data	2.058	SD of logged Data	1.006

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.99	95% Adjusted-CLT UCL (Chen-1995)	17.94
		95% Modified-t UCL (Johnson-1978)	19.04

Nonparametric Distribution Free UCLs

95% CLT UCL	17.59	95% Jackknife UCL	18.99
95% Standard Bootstrap UCL	16.91	95% Bootstrap-t UCL	19.85
95% Hall's Bootstrap UCL	14.87	95% Percentile Bootstrap UCL	17.14
95% BCA Bootstrap UCL	17.14		
90% Chebyshev(Mean, Sd) UCL	22.7	95% Chebyshev(Mean, Sd) UCL	27.83
97.5% Chebyshev(Mean, Sd) UCL	34.94	99% Chebyshev(Mean, Sd) UCL	48.91

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	6.48	Mean	26.95
Maximum	54.3	Median	25.01
SD	21.72	Std. Error of Mean	8.865
Coefficient of Variation	0.806	Skewness	0.173
Mean of logged Data	2.921	SD of logged Data	1.005

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.81	95% Adjusted-CLT UCL (Chen-1995)	42.2
		95% Modified-t UCL (Johnson-1978)	44.92

Nonparametric Distribution Free UCLs

95% CLT UCL	41.53	95% Jackknife UCL	44.81
95% Standard Bootstrap UCL	40.01	95% Bootstrap-t UCL	46.71
95% Hall's Bootstrap UCL	35.13	95% Percentile Bootstrap UCL	40.55
95% BCA Bootstrap UCL	40.7		
90% Chebyshev(Mean, Sd) UCL	53.54	95% Chebyshev(Mean, Sd) UCL	65.59
97.5% Chebyshev(Mean, Sd) UCL	82.31	99% Chebyshev(Mean, Sd) UCL	115.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:46:45 AM
From File	21078F.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	15.2
Maximum	16.8	Median	15.15
SD	1.198	Std. Error of Mean	0.489
Coefficient of Variation	0.0788	Skewness	0.022
Mean of logged Data	2.719	SD of logged Data	0.0791

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.19	95% Adjusted-CLT UCL (Chen-1995)	16.01
		95% Modified-t UCL (Johnson-1978)	16.19

Nonparametric Distribution Free UCLs

95% CLT UCL	16	95% Jackknife UCL	16.19
95% Standard Bootstrap UCL	15.95	95% Bootstrap-t UCL	16.23
95% Hall's Bootstrap UCL	15.86	95% Percentile Bootstrap UCL	15.92
95% BCA Bootstrap UCL	15.92		
90% Chebyshev(Mean, Sd) UCL	16.67	95% Chebyshev(Mean, Sd) UCL	17.33
97.5% Chebyshev(Mean, Sd) UCL	18.26	99% Chebyshev(Mean, Sd) UCL	20.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.8	Mean	35.03
Maximum	90.5	Median	24.1
SD	28.9	Std. Error of Mean	11.8
Coefficient of Variation	0.825	Skewness	1.875
Mean of logged Data	3.332	SD of logged Data	0.694

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.81	95% Adjusted-CLT UCL (Chen-1995)	64.09
		95% Modified-t UCL (Johnson-1978)	60.32

Nonparametric Distribution Free UCLs

95% CLT UCL	54.44	95% Jackknife UCL	58.81
95% Standard Bootstrap UCL	52.6	95% Bootstrap-t UCL	91.74
95% Hall's Bootstrap UCL	127.8	95% Percentile Bootstrap UCL	55.77
95% BCA Bootstrap UCL	60		
90% Chebyshev(Mean, Sd) UCL	70.43	95% Chebyshev(Mean, Sd) UCL	86.47
97.5% Chebyshev(Mean, Sd) UCL	108.7	99% Chebyshev(Mean, Sd) UCL	152.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	47.3	Mean	51.32
Maximum	56.6	Median	50.45
SD	4.11	Std. Error of Mean	1.678
Coefficient of Variation	0.0801	Skewness	0.361
Mean of logged Data	3.935	SD of logged Data	0.0795

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.7	95% Adjusted-CLT UCL (Chen-1995)	54.34
		95% Modified-t UCL (Johnson-1978)	54.74

Nonparametric Distribution Free UCLs

95% CLT UCL	54.08	95% Jackknife UCL	54.7
95% Standard Bootstrap UCL	53.83	95% Bootstrap-t UCL	56.85
95% Hall's Bootstrap UCL	53.3	95% Percentile Bootstrap UCL	53.9
95% BCA Bootstrap UCL	53.98		
90% Chebyshev(Mean, Sd) UCL	56.35	95% Chebyshev(Mean, Sd) UCL	58.63
97.5% Chebyshev(Mean, Sd) UCL	61.8	99% Chebyshev(Mean, Sd) UCL	68.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.774	Mean	0.819
Maximum	0.907	Median	0.804
SD	0.0514	Std. Error of Mean	0.021
Coefficient of Variation	0.0628	Skewness	1.117
Mean of logged Data	-0.201	SD of logged Data	0.0615

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.862	95% Adjusted-CLT UCL (Chen-1995)	0.864
		95% Modified-t UCL (Johnson-1978)	0.863

Nonparametric Distribution Free UCLs

95% CLT UCL	0.854	95% Jackknife UCL	0.862
95% Standard Bootstrap UCL	0.851	95% Bootstrap-t UCL	0.914
95% Hall's Bootstrap UCL	0.897	95% Percentile Bootstrap UCL	0.852
95% BCA Bootstrap UCL	0.858		
90% Chebyshev(Mean, Sd) UCL	0.882	95% Chebyshev(Mean, Sd) UCL	0.911
97.5% Chebyshev(Mean, Sd) UCL	0.95	99% Chebyshev(Mean, Sd) UCL	1.028

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.347	Mean	0.497
Maximum	0.599	Median	0.512
SD	0.0842	Std. Error of Mean	0.0344
Coefficient of Variation	0.169	Skewness	-1.122
Mean of logged Data	-0.713	SD of logged Data	0.186

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.566	95% Adjusted-CLT UCL (Chen-1995)	0.537
		95% Modified-t UCL (Johnson-1978)	0.563

Nonparametric Distribution Free UCLs

95% CLT UCL	0.553	95% Jackknife UCL	0.566
95% Standard Bootstrap UCL	0.547	95% Bootstrap-t UCL	0.549
95% Hall's Bootstrap UCL	0.541	95% Percentile Bootstrap UCL	0.545
95% BCA Bootstrap UCL	0.539		
90% Chebyshev(Mean, Sd) UCL	0.6	95% Chebyshev(Mean, Sd) UCL	0.647
97.5% Chebyshev(Mean, Sd) UCL	0.711	99% Chebyshev(Mean, Sd) UCL	0.839

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.54	Mean	1.968
Maximum	2.16	Median	2.075
SD	0.24	Std. Error of Mean	0.098
Coefficient of Variation	0.122	Skewness	-1.45
Mean of logged Data	0.67	SD of logged Data	0.131

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.165	95% Adjusted-CLT UCL (Chen-1995)	2.067
		95% Modified-t UCL (Johnson-1978)	2.155

Nonparametric Distribution Free UCLs

95% CLT UCL	2.129	95% Jackknife UCL	2.165
95% Standard Bootstrap UCL	2.111	95% Bootstrap-t UCL	2.112
95% Hall's Bootstrap UCL	2.068	95% Percentile Bootstrap UCL	2.106
95% BCA Bootstrap UCL	2.087		
90% Chebyshev(Mean, Sd) UCL	2.261	95% Chebyshev(Mean, Sd) UCL	2.394
97.5% Chebyshev(Mean, Sd) UCL	2.579	99% Chebyshev(Mean, Sd) UCL	2.942

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.54	Mean	10.51
Maximum	17.6	Median	10.13
SD	5.222	Std. Error of Mean	2.132
Coefficient of Variation	0.497	Skewness	0.284
Mean of logged Data	2.242	SD of logged Data	0.521

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.8	95% Adjusted-CLT UCL (Chen-1995)	14.28
		95% Modified-t UCL (Johnson-1978)	14.85

Nonparametric Distribution Free UCLs

95% CLT UCL	14.01	95% Jackknife UCL	14.8
95% Standard Bootstrap UCL	13.73	95% Bootstrap-t UCL	15.73
95% Hall's Bootstrap UCL	12.66	95% Percentile Bootstrap UCL	13.74
95% BCA Bootstrap UCL	13.86		
90% Chebyshev(Mean, Sd) UCL	16.9	95% Chebyshev(Mean, Sd) UCL	19.8
97.5% Chebyshev(Mean, Sd) UCL	23.82	99% Chebyshev(Mean, Sd) UCL	31.72

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.07	Mean	14.97
Maximum	23.7	Median	14.4
SD	7.151	Std. Error of Mean	2.919
Coefficient of Variation	0.478	Skewness	0.137
Mean of logged Data	2.603	SD of logged Data	0.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.86	95% Adjusted-CLT UCL (Chen-1995)	19.95
		95% Modified-t UCL (Johnson-1978)	20.88

Nonparametric Distribution Free UCLs

95% CLT UCL	19.78	95% Jackknife UCL	20.86
95% Standard Bootstrap UCL	19.31	95% Bootstrap-t UCL	21.2
95% Hall's Bootstrap UCL	17.6	95% Percentile Bootstrap UCL	19.48
95% BCA Bootstrap UCL	19.51		
90% Chebyshev(Mean, Sd) UCL	23.73	95% Chebyshev(Mean, Sd) UCL	27.7
97.5% Chebyshev(Mean, Sd) UCL	33.21	99% Chebyshev(Mean, Sd) UCL	44.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.1	Mean	22.27
Maximum	36.2	Median	21.1
SD	10.58	Std. Error of Mean	4.318
Coefficient of Variation	0.475	Skewness	0.237
Mean of logged Data	3.003	SD of logged Data	0.496

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.97	95% Adjusted-CLT UCL (Chen-1995)	29.82
		95% Modified-t UCL (Johnson-1978)	31.04

Nonparametric Distribution Free UCLs

95% CLT UCL	29.37	95% Jackknife UCL	30.97
95% Standard Bootstrap UCL	28.81	95% Bootstrap-t UCL	32.23
95% Hall's Bootstrap UCL	26.43	95% Percentile Bootstrap UCL	28.98
95% BCA Bootstrap UCL	28.88		
90% Chebyshev(Mean, Sd) UCL	35.22	95% Chebyshev(Mean, Sd) UCL	41.09
97.5% Chebyshev(Mean, Sd) UCL	49.23	99% Chebyshev(Mean, Sd) UCL	65.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.7	Mean	13
Maximum	20.5	Median	12.59
SD	5.591	Std. Error of Mean	2.283
Coefficient of Variation	0.43	Skewness	0.259
Mean of logged Data	2.484	SD of logged Data	0.444

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.6	95% Adjusted-CLT UCL (Chen-1995)	17.02
		95% Modified-t UCL (Johnson-1978)	17.64

Nonparametric Distribution Free UCLs

95% CLT UCL	16.76	95% Jackknife UCL	17.6
95% Standard Bootstrap UCL	16.44	95% Bootstrap-t UCL	18.51
95% Hall's Bootstrap UCL	15.25	95% Percentile Bootstrap UCL	16.49
95% BCA Bootstrap UCL	16.58		
90% Chebyshev(Mean, Sd) UCL	19.85	95% Chebyshev(Mean, Sd) UCL	22.95
97.5% Chebyshev(Mean, Sd) UCL	27.26	99% Chebyshev(Mean, Sd) UCL	35.72

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.01	Mean	8.023
Maximum	14	Median	7.32
SD	4.123	Std. Error of Mean	1.683
Coefficient of Variation	0.514	Skewness	0.475
Mean of logged Data	1.967	SD of logged Data	0.531

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.42	95% Adjusted-CLT UCL (Chen-1995)	11.14
		95% Modified-t UCL (Johnson-1978)	11.47

Nonparametric Distribution Free UCLs

95% CLT UCL	10.79	95% Jackknife UCL	11.42
95% Standard Bootstrap UCL	10.57	95% Bootstrap-t UCL	11.72
95% Hall's Bootstrap UCL	10.06	95% Percentile Bootstrap UCL	10.67
95% BCA Bootstrap UCL	10.78		
90% Chebyshev(Mean, Sd) UCL	13.07	95% Chebyshev(Mean, Sd) UCL	15.36
97.5% Chebyshev(Mean, Sd) UCL	18.54	99% Chebyshev(Mean, Sd) UCL	24.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.94	Mean	15.49
Maximum	25.5	Median	14.48
SD	7.679	Std. Error of Mean	3.135
Coefficient of Variation	0.496	Skewness	0.237
Mean of logged Data	2.629	SD of logged Data	0.522

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.8	95% Adjusted-CLT UCL (Chen-1995)	20.97
		95% Modified-t UCL (Johnson-1978)	21.85

Nonparametric Distribution Free UCLs

95% CLT UCL	20.64	95% Jackknife UCL	21.8
95% Standard Bootstrap UCL	20.22	95% Bootstrap-t UCL	22.22
95% Hall's Bootstrap UCL	18.54	95% Percentile Bootstrap UCL	20.21
95% BCA Bootstrap UCL	20.3		
90% Chebyshev(Mean, Sd) UCL	24.89	95% Chebyshev(Mean, Sd) UCL	29.15
97.5% Chebyshev(Mean, Sd) UCL	35.06	99% Chebyshev(Mean, Sd) UCL	46.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.155	Mean	3.817
Maximum	4.96	Median	3.598
SD	0.735	Std. Error of Mean	0.3
Coefficient of Variation	0.193	Skewness	0.753
Mean of logged Data	1.325	SD of logged Data	0.187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.421	95% Adjusted-CLT UCL (Chen-1995)	4.409
		95% Modified-t UCL (Johnson-1978)	4.437

Nonparametric Distribution Free UCLs

95% CLT UCL	4.31	95% Jackknife UCL	4.421
95% Standard Bootstrap UCL	4.263	95% Bootstrap-t UCL	4.544
95% Hall's Bootstrap UCL	4.401	95% Percentile Bootstrap UCL	4.278
95% BCA Bootstrap UCL	4.388		
90% Chebyshev(Mean, Sd) UCL	4.717	95% Chebyshev(Mean, Sd) UCL	5.125
97.5% Chebyshev(Mean, Sd) UCL	5.691	99% Chebyshev(Mean, Sd) UCL	6.803

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.57	Mean	18.56
Maximum	31.4	Median	17.2
SD	9.271	Std. Error of Mean	3.785
Coefficient of Variation	0.499	Skewness	0.346
Mean of logged Data	2.811	SD of logged Data	0.52

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.19	95% Adjusted-CLT UCL (Chen-1995)	25.36
		95% Modified-t UCL (Johnson-1978)	26.28

Nonparametric Distribution Free UCLs

95% CLT UCL	24.79	95% Jackknife UCL	26.19
95% Standard Bootstrap UCL	24.32	95% Bootstrap-t UCL	27.18
95% Hall's Bootstrap UCL	22.5	95% Percentile Bootstrap UCL	24.4
95% BCA Bootstrap UCL	24.28		
90% Chebyshev(Mean, Sd) UCL	29.92	95% Chebyshev(Mean, Sd) UCL	35.06
97.5% Chebyshev(Mean, Sd) UCL	42.2	99% Chebyshev(Mean, Sd) UCL	56.22

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.26	Mean	1.302
Maximum	1.33	Median	1.3
SD	0.0252	Std. Error of Mean	0.0103
Coefficient of Variation	0.0194	Skewness	-0.699
Mean of logged Data	0.263	SD of logged Data	0.0195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.322	95% Adjusted-CLT UCL (Chen-1995)	1.315
		95% Modified-t UCL (Johnson-1978)	1.322

Nonparametric Distribution Free UCLs

95% CLT UCL	1.319	95% Jackknife UCL	1.322
95% Standard Bootstrap UCL	1.317	95% Bootstrap-t UCL	1.32
95% Hall's Bootstrap UCL	1.32	95% Percentile Bootstrap UCL	1.317
95% BCA Bootstrap UCL	1.314		
90% Chebyshev(Mean, Sd) UCL	1.333	95% Chebyshev(Mean, Sd) UCL	1.347
97.5% Chebyshev(Mean, Sd) UCL	1.366	99% Chebyshev(Mean, Sd) UCL	1.404

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.24	Mean	13.65
Maximum	20.9	Median	13.03
SD	5.765	Std. Error of Mean	2.354
Coefficient of Variation	0.422	Skewness	0.175
Mean of logged Data	2.535	SD of logged Data	0.438

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.39	95% Adjusted-CLT UCL (Chen-1995)	17.7
		95% Modified-t UCL (Johnson-1978)	18.42

Nonparametric Distribution Free UCLs

95% CLT UCL	17.52	95% Jackknife UCL	18.39
95% Standard Bootstrap UCL	17.22	95% Bootstrap-t UCL	18.9
95% Hall's Bootstrap UCL	15.8	95% Percentile Bootstrap UCL	17.19
95% BCA Bootstrap UCL	17.14		
90% Chebyshev(Mean, Sd) UCL	20.71	95% Chebyshev(Mean, Sd) UCL	23.91
97.5% Chebyshev(Mean, Sd) UCL	28.35	99% Chebyshev(Mean, Sd) UCL	37.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.14	Mean	1.467
Maximum	1.75	Median	1.535
SD	0.25	Std. Error of Mean	0.102
Coefficient of Variation	0.17	Skewness	-0.429
Mean of logged Data	0.37	SD of logged Data	0.177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.672	95% Adjusted-CLT UCL (Chen-1995)	1.615
		95% Modified-t UCL (Johnson-1978)	1.669

Nonparametric Distribution Free UCLs

95% CLT UCL	1.634	95% Jackknife UCL	1.672
95% Standard Bootstrap UCL	1.624	95% Bootstrap-t UCL	1.63
95% Hall's Bootstrap UCL	1.581	95% Percentile Bootstrap UCL	1.613
95% BCA Bootstrap UCL	1.617		
90% Chebyshev(Mean, Sd) UCL	1.773	95% Chebyshev(Mean, Sd) UCL	1.911
97.5% Chebyshev(Mean, Sd) UCL	2.103	99% Chebyshev(Mean, Sd) UCL	2.481

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.07	Mean	7.102
Maximum	11.8	Median	6.62
SD	3.106	Std. Error of Mean	1.268
Coefficient of Variation	0.437	Skewness	0.562
Mean of logged Data	1.88	SD of logged Data	0.439

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.657	95% Adjusted-CLT UCL (Chen-1995)	9.498
		95% Modified-t UCL (Johnson-1978)	9.705

Nonparametric Distribution Free UCLs

95% CLT UCL	9.188	95% Jackknife UCL	9.657
95% Standard Bootstrap UCL	8.987	95% Bootstrap-t UCL	10.22
95% Hall's Bootstrap UCL	8.697	95% Percentile Bootstrap UCL	9.077
95% BCA Bootstrap UCL	9.14		
90% Chebyshev(Mean, Sd) UCL	10.91	95% Chebyshev(Mean, Sd) UCL	12.63
97.5% Chebyshev(Mean, Sd) UCL	15.02	99% Chebyshev(Mean, Sd) UCL	19.72

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.4	Mean	19.62
Maximum	32.5	Median	18.4
SD	9.638	Std. Error of Mean	3.935
Coefficient of Variation	0.491	Skewness	0.279
Mean of logged Data	2.869	SD of logged Data	0.514

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.55	95% Adjusted-CLT UCL (Chen-1995)	26.57
		95% Modified-t UCL (Johnson-1978)	27.62

Nonparametric Distribution Free UCLs

95% CLT UCL	26.09	95% Jackknife UCL	27.55
95% Standard Bootstrap UCL	25.57	95% Bootstrap-t UCL	28.48
95% Hall's Bootstrap UCL	23.63	95% Percentile Bootstrap UCL	25.78
95% BCA Bootstrap UCL	25.58		
90% Chebyshev(Mean, Sd) UCL	31.42	95% Chebyshev(Mean, Sd) UCL	36.77
97.5% Chebyshev(Mean, Sd) UCL	44.19	99% Chebyshev(Mean, Sd) UCL	58.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:48:13 AM
From File	21078G.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.5	Mean	12.23
Maximum	13	Median	12.25
SD	0.49	Std. Error of Mean	0.2
Coefficient of Variation	0.0401	Skewness	0.193
Mean of logged Data	2.503	SD of logged Data	0.04

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.63	95% Adjusted-CLT UCL (Chen-1995)	12.57
		95% Modified-t UCL (Johnson-1978)	12.63

Nonparametric Distribution Free UCLs

95% CLT UCL	12.55	95% Jackknife UCL	12.63
95% Standard Bootstrap UCL	12.52	95% Bootstrap-t UCL	12.62
95% Hall's Bootstrap UCL	12.67	95% Percentile Bootstrap UCL	12.53
95% BCA Bootstrap UCL	12.51		
90% Chebyshev(Mean, Sd) UCL	12.82	95% Chebyshev(Mean, Sd) UCL	13.1
97.5% Chebyshev(Mean, Sd) UCL	13.47	99% Chebyshev(Mean, Sd) UCL	14.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.3	Mean	41.68
Maximum	88	Median	25.35
SD	30.26	Std. Error of Mean	12.35
Coefficient of Variation	0.726	Skewness	1.032
Mean of logged Data	3.527	SD of logged Data	0.678

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	66.57	95% Adjusted-CLT UCL (Chen-1995)	67.56
		95% Modified-t UCL (Johnson-1978)	67.44

Nonparametric Distribution Free UCLs

95% CLT UCL	62	95% Jackknife UCL	66.57
95% Standard Bootstrap UCL	60.38	95% Bootstrap-t UCL	173.9
95% Hall's Bootstrap UCL	259.2	95% Percentile Bootstrap UCL	61.68
95% BCA Bootstrap UCL	63.13		
90% Chebyshev(Mean, Sd) UCL	78.74	95% Chebyshev(Mean, Sd) UCL	95.53
97.5% Chebyshev(Mean, Sd) UCL	118.8	99% Chebyshev(Mean, Sd) UCL	164.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.9	Mean	49.28
Maximum	59.4	Median	46.1
SD	6.374	Std. Error of Mean	2.602
Coefficient of Variation	0.129	Skewness	1.085
Mean of logged Data	3.891	SD of logged Data	0.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.53	95% Adjusted-CLT UCL (Chen-1995)	54.8
		95% Modified-t UCL (Johnson-1978)	54.72

Nonparametric Distribution Free UCLs

95% CLT UCL	53.56	95% Jackknife UCL	54.53
95% Standard Bootstrap UCL	53.17	95% Bootstrap-t UCL	76.02
95% Hall's Bootstrap UCL	98.89	95% Percentile Bootstrap UCL	53.42
95% BCA Bootstrap UCL	54.15		
90% Chebyshev(Mean, Sd) UCL	57.09	95% Chebyshev(Mean, Sd) UCL	60.63
97.5% Chebyshev(Mean, Sd) UCL	65.53	99% Chebyshev(Mean, Sd) UCL	75.17

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.623	Mean	1.124
Maximum	2.25	Median	0.96
SD	0.569	Std. Error of Mean	0.232
Coefficient of Variation	0.506	Skewness	2.098
Mean of logged Data	0.0342	SD of logged Data	0.419

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.592	95% Adjusted-CLT UCL (Chen-1995)	1.718
		95% Modified-t UCL (Johnson-1978)	1.625

Nonparametric Distribution Free UCLs

95% CLT UCL	1.506	95% Jackknife UCL	1.592
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.82	95% Chebyshev(Mean, Sd) UCL	2.136
97.5% Chebyshev(Mean, Sd) UCL	2.574	99% Chebyshev(Mean, Sd) UCL	3.434

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.51	Mean	0.774
Maximum	1.43	Median	0.661
SD	0.361	Std. Error of Mean	0.147
Coefficient of Variation	0.466	Skewness	1.466
Mean of logged Data	-0.335	SD of logged Data	0.419

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.07	95% Adjusted-CLT UCL (Chen-1995)	1.11
		95% Modified-t UCL (Johnson-1978)	1.085

Nonparametric Distribution Free UCLs

95% CLT UCL	1.016	95% Jackknife UCL	1.07
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.215	95% Chebyshev(Mean, Sd) UCL	1.415
97.5% Chebyshev(Mean, Sd) UCL	1.693	99% Chebyshev(Mean, Sd) UCL	2.238

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.075	Mean	2.605
Maximum	4.03	Median	2.19
SD	0.797	Std. Error of Mean	0.325
Coefficient of Variation	0.306	Skewness	1.494
Mean of logged Data	0.923	SD of logged Data	0.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.261	95% Adjusted-CLT UCL (Chen-1995)	3.352
		95% Modified-t UCL (Johnson-1978)	3.294

Nonparametric Distribution Free UCLs

95% CLT UCL	3.14	95% Jackknife UCL	3.261
95% Standard Bootstrap UCL	3.094	95% Bootstrap-t UCL	5.738
95% Hall's Bootstrap UCL	6.784	95% Percentile Bootstrap UCL	3.096
95% BCA Bootstrap UCL	3.378		
90% Chebyshev(Mean, Sd) UCL	3.581	95% Chebyshev(Mean, Sd) UCL	4.024
97.5% Chebyshev(Mean, Sd) UCL	4.637	99% Chebyshev(Mean, Sd) UCL	5.843

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.86	Mean	17.2
Maximum	36	Median	15.38
SD	13.96	Std. Error of Mean	5.698
Coefficient of Variation	0.811	Skewness	0.287
Mean of logged Data	2.475	SD of logged Data	1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.69	95% Adjusted-CLT UCL (Chen-1995)	27.29
		95% Modified-t UCL (Johnson-1978)	28.8

Nonparametric Distribution Free UCLs

95% CLT UCL	26.58	95% Jackknife UCL	28.69
95% Standard Bootstrap UCL	25.7	95% Bootstrap-t UCL	30.08
95% Hall's Bootstrap UCL	22.94	95% Percentile Bootstrap UCL	25.86
95% BCA Bootstrap UCL	26.39		
90% Chebyshev(Mean, Sd) UCL	34.3	95% Chebyshev(Mean, Sd) UCL	42.04
97.5% Chebyshev(Mean, Sd) UCL	52.79	99% Chebyshev(Mean, Sd) UCL	73.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.19	Mean	19.87
Maximum	39.6	Median	17.71
SD	15.18	Std. Error of Mean	6.198
Coefficient of Variation	0.764	Skewness	0.243
Mean of logged Data	2.673	SD of logged Data	0.914

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	32.35	95% Adjusted-CLT UCL (Chen-1995)	30.72
		95% Modified-t UCL (Johnson-1978)	32.46

Nonparametric Distribution Free UCLs

95% CLT UCL	30.06	95% Jackknife UCL	32.35
95% Standard Bootstrap UCL	29.14	95% Bootstrap-t UCL	36.42
95% Hall's Bootstrap UCL	25.67	95% Percentile Bootstrap UCL	29.14
95% BCA Bootstrap UCL	29.52		
90% Chebyshev(Mean, Sd) UCL	38.46	95% Chebyshev(Mean, Sd) UCL	46.88
97.5% Chebyshev(Mean, Sd) UCL	58.57	99% Chebyshev(Mean, Sd) UCL	81.54

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.31	Mean	32.25
Maximum	63.2	Median	30.35
SD	24.74	Std. Error of Mean	10.1
Coefficient of Variation	0.767	Skewness	0.159
Mean of logged Data	3.147	SD of logged Data	0.936

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.6	95% Adjusted-CLT UCL (Chen-1995)	49.57
		95% Modified-t UCL (Johnson-1978)	52.71

Nonparametric Distribution Free UCLs

95% CLT UCL	48.86	95% Jackknife UCL	52.6
95% Standard Bootstrap UCL	47.51	95% Bootstrap-t UCL	54.45
95% Hall's Bootstrap UCL	41.39	95% Percentile Bootstrap UCL	47.1
95% BCA Bootstrap UCL	48.42		
90% Chebyshev(Mean, Sd) UCL	62.55	95% Chebyshev(Mean, Sd) UCL	76.27
97.5% Chebyshev(Mean, Sd) UCL	95.32	99% Chebyshev(Mean, Sd) UCL	132.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.83	Mean	17.65
Maximum	34.9	Median	16.47
SD	13.51	Std. Error of Mean	5.515
Coefficient of Variation	0.765	Skewness	0.19
Mean of logged Data	2.549	SD of logged Data	0.926

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.76	95% Adjusted-CLT UCL (Chen-1995)	27.18
		95% Modified-t UCL (Johnson-1978)	28.83

Nonparametric Distribution Free UCLs

95% CLT UCL	26.72	95% Jackknife UCL	28.76
95% Standard Bootstrap UCL	25.88	95% Bootstrap-t UCL	30.32
95% Hall's Bootstrap UCL	22.72	95% Percentile Bootstrap UCL	26.14
95% BCA Bootstrap UCL	26.14		
90% Chebyshev(Mean, Sd) UCL	34.19	95% Chebyshev(Mean, Sd) UCL	41.69
97.5% Chebyshev(Mean, Sd) UCL	52.09	99% Chebyshev(Mean, Sd) UCL	72.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.09	Mean	12.11
Maximum	25.9	Median	10.87
SD	9.752	Std. Error of Mean	3.981
Coefficient of Variation	0.806	Skewness	0.38
Mean of logged Data	2.144	SD of logged Data	0.962

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.13	95% Adjusted-CLT UCL (Chen-1995)	19.32
		95% Modified-t UCL (Johnson-1978)	20.23

Nonparametric Distribution Free UCLs

95% CLT UCL	18.66	95% Jackknife UCL	20.13
95% Standard Bootstrap UCL	18.13	95% Bootstrap-t UCL	22.12
95% Hall's Bootstrap UCL	16.38	95% Percentile Bootstrap UCL	18.19
95% BCA Bootstrap UCL	18.25		
90% Chebyshev(Mean, Sd) UCL	24.05	95% Chebyshev(Mean, Sd) UCL	29.46
97.5% Chebyshev(Mean, Sd) UCL	36.97	99% Chebyshev(Mean, Sd) UCL	51.72

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.06	Mean	22.39
Maximum	44.9	Median	20.64
SD	17.23	Std. Error of Mean	7.036
Coefficient of Variation	0.77	Skewness	0.226
Mean of logged Data	2.786	SD of logged Data	0.926

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.57	95% Adjusted-CLT UCL (Chen-1995)	34.65
		95% Modified-t UCL (Johnson-1978)	36.67

Nonparametric Distribution Free UCLs

95% CLT UCL	33.96	95% Jackknife UCL	36.57
95% Standard Bootstrap UCL	33.09	95% Bootstrap-t UCL	39.93
95% Hall's Bootstrap UCL	29.03	95% Percentile Bootstrap UCL	33.21
95% BCA Bootstrap UCL	33.21		
90% Chebyshev(Mean, Sd) UCL	43.5	95% Chebyshev(Mean, Sd) UCL	53.06
97.5% Chebyshev(Mean, Sd) UCL	66.33	99% Chebyshev(Mean, Sd) UCL	92.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.65	Mean	6.103

Maximum	11.3	Median	5.15
SD	3.639	Std. Error of Mean	1.486
Coefficient of Variation	0.596	Skewness	0.498
Mean of logged Data	1.65	SD of logged Data	0.624

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.096	95% Adjusted-CLT UCL (Chen-1995)	8.869
		95% Modified-t UCL (Johnson-1978)	9.147

Nonparametric Distribution Free UCLs

95% CLT UCL	8.546	95% Jackknife UCL	9.096
95% Standard Bootstrap UCL	8.357	95% Bootstrap-t UCL	9.175
95% Hall's Bootstrap UCL	8.021	95% Percentile Bootstrap UCL	8.539
95% BCA Bootstrap UCL	8.539		
90% Chebyshev(Mean, Sd) UCL	10.56	95% Chebyshev(Mean, Sd) UCL	12.58
97.5% Chebyshev(Mean, Sd) UCL	15.38	99% Chebyshev(Mean, Sd) UCL	20.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.62	Mean	34.1
Maximum	67.6	Median	30.2
SD	26.41	Std. Error of Mean	10.78
Coefficient of Variation	0.774	Skewness	0.221
Mean of logged Data	3.201	SD of logged Data	0.936

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.83	95% Adjusted-CLT UCL (Chen-1995)	52.87
		95% Modified-t UCL (Johnson-1978)	55.99

Nonparametric Distribution Free UCLs

95% CLT UCL	51.83	95% Jackknife UCL	55.83
95% Standard Bootstrap UCL	50.42	95% Bootstrap-t UCL	56.34
95% Hall's Bootstrap UCL	44.04	95% Percentile Bootstrap UCL	50.99
95% BCA Bootstrap UCL	49.7		

90% Chebyshev(Mean, Sd) UCL	66.44	95% Chebyshev(Mean, Sd) UCL	81.09
97.5% Chebyshev(Mean, Sd) UCL	101.4	99% Chebyshev(Mean, Sd) UCL	141.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.28	Mean	1.301
Maximum	1.325	Median	1.3
SD	0.0229	Std. Error of Mean	0.00935
Coefficient of Variation	0.0176	Skewness	0.0267
Mean of logged Data	0.263	SD of logged Data	0.0176

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.32	95% Adjusted-CLT UCL (Chen-1995)	1.316
		95% Modified-t UCL (Johnson-1978)	1.32

Nonparametric Distribution Free UCLs

95% CLT UCL	1.316	95% Jackknife UCL	1.32
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.329	95% Chebyshev(Mean, Sd) UCL	1.342
97.5% Chebyshev(Mean, Sd) UCL	1.359	99% Chebyshev(Mean, Sd) UCL	1.394

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.46	Mean	19.36
Maximum	39.5	Median	17.21
SD	14.92	Std. Error of Mean	6.092
Coefficient of Variation	0.771	Skewness	0.298
Mean of logged Data	2.647	SD of logged Data	0.912

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.64	95% Adjusted-CLT UCL (Chen-1995)	30.17
		95% Modified-t UCL (Johnson-1978)	31.76

Nonparametric Distribution Free UCLs

95% CLT UCL	29.38	95% Jackknife UCL	31.64
95% Standard Bootstrap UCL	28.67	95% Bootstrap-t UCL	32.9
95% Hall's Bootstrap UCL	25.53	95% Percentile Bootstrap UCL	28.86
95% BCA Bootstrap UCL	28.86		
90% Chebyshev(Mean, Sd) UCL	37.64	95% Chebyshev(Mean, Sd) UCL	45.92
97.5% Chebyshev(Mean, Sd) UCL	57.41	99% Chebyshev(Mean, Sd) UCL	79.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.96	Mean	1.065
Maximum	1.28	Median	0.976
SD	0.152	Std. Error of Mean	0.062
Coefficient of Variation	0.143	Skewness	0.972
Mean of logged Data	0.0551	SD of logged Data	0.137

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.19	95% Adjusted-CLT UCL (Chen-1995)	1.193
		95% Modified-t UCL (Johnson-1978)	1.194

Nonparametric Distribution Free UCLs

95% CLT UCL	1.167	95% Jackknife UCL	1.19
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.251	95% Chebyshev(Mean, Sd) UCL	1.336
97.5% Chebyshev(Mean, Sd) UCL	1.452	99% Chebyshev(Mean, Sd) UCL	1.682

Suggested UCL to Use

95% Student's-t UCL	1.19	or 95% Modified-t UCL	1.194

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.27	Mean	12.1
Maximum	24.8	Median	10.65
SD	9.358	Std. Error of Mean	3.82
Coefficient of Variation	0.773	Skewness	0.312
Mean of logged Data	2.175	SD of logged Data	0.916

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.8	95% Adjusted-CLT UCL (Chen-1995)	18.9
		95% Modified-t UCL (Johnson-1978)	19.88

Nonparametric Distribution Free UCLs

95% CLT UCL	18.38	95% Jackknife UCL	19.8
95% Standard Bootstrap UCL	17.84	95% Bootstrap-t UCL	20.72
95% Hall's Bootstrap UCL	15.9	95% Percentile Bootstrap UCL	17.94
95% BCA Bootstrap UCL	18.16		
90% Chebyshev(Mean, Sd) UCL	23.56	95% Chebyshev(Mean, Sd) UCL	28.75
97.5% Chebyshev(Mean, Sd) UCL	35.96	99% Chebyshev(Mean, Sd) UCL	50.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.11	Mean	32.97
Maximum	66.4	Median	29.15
SD	25.72	Std. Error of Mean	10.5
Coefficient of Variation	0.78	Skewness	0.251
Mean of logged Data	3.162	SD of logged Data	0.944

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.13	95% Adjusted-CLT UCL (Chen-1995)	51.39
		95% Modified-t UCL (Johnson-1978)	54.31

Nonparametric Distribution Free UCLs

95% CLT UCL	50.24	95% Jackknife UCL	54.13
95% Standard Bootstrap UCL	49.22	95% Bootstrap-t UCL	54.52
95% Hall's Bootstrap UCL	42.82	95% Percentile Bootstrap UCL	48.2
95% BCA Bootstrap UCL	50.12		
90% Chebyshev(Mean, Sd) UCL	64.47	95% Chebyshev(Mean, Sd) UCL	78.74
97.5% Chebyshev(Mean, Sd) UCL	98.54	99% Chebyshev(Mean, Sd) UCL	137.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:49:30 AM
From File	21078H.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.9	Mean	14.77
Maximum	16.6	Median	14.8
SD	1.642	Std. Error of Mean	0.67
Coefficient of Variation	0.111	Skewness	-0.0211
Mean of logged Data	2.687	SD of logged Data	0.112

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.12	95% Adjusted-CLT UCL (Chen-1995)	15.86
		95% Modified-t UCL (Johnson-1978)	16.12

Nonparametric Distribution Free UCLs

95% CLT UCL	15.87	95% Jackknife UCL	16.12
95% Standard Bootstrap UCL	15.78	95% Bootstrap-t UCL	16.18
95% Hall's Bootstrap UCL	15.39	95% Percentile Bootstrap UCL	15.8
95% BCA Bootstrap UCL	15.8		
90% Chebyshev(Mean, Sd) UCL	16.78	95% Chebyshev(Mean, Sd) UCL	17.69
97.5% Chebyshev(Mean, Sd) UCL	18.95	99% Chebyshev(Mean, Sd) UCL	21.43

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.4	Mean	98.23
Maximum	212	Median	73.8
SD	62.76	Std. Error of Mean	25.62
Coefficient of Variation	0.639	Skewness	1.494

Mean of logged Data	4.441	SD of logged Data	0.573

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	149.9	95% Adjusted-CLT UCL (Chen-1995)	157.1
		95% Modified-t UCL (Johnson-1978)	152.5

Nonparametric Distribution Free UCLs

95% CLT UCL	140.4	95% Jackknife UCL	149.9
95% Standard Bootstrap UCL	136.2	95% Bootstrap-t UCL	235.6
95% Hall's Bootstrap UCL	337.5	95% Percentile Bootstrap UCL	140.2
95% BCA Bootstrap UCL	151		
90% Chebyshev(Mean, Sd) UCL	175.1	95% Chebyshev(Mean, Sd) UCL	209.9
97.5% Chebyshev(Mean, Sd) UCL	258.3	99% Chebyshev(Mean, Sd) UCL	353.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	46.5	Mean	48.9
Maximum	51.3	Median	48.85
SD	2.052	Std. Error of Mean	0.838
Coefficient of Variation	0.042	Skewness	0.0379
Mean of logged Data	3.889	SD of logged Data	0.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.59	95% Adjusted-CLT UCL (Chen-1995)	50.29
		95% Modified-t UCL (Johnson-1978)	50.59

Nonparametric Distribution Free UCLs

95% CLT UCL	50.28	95% Jackknife UCL	50.59
95% Standard Bootstrap UCL	50.18	95% Bootstrap-t UCL	50.81
95% Hall's Bootstrap UCL	50.14	95% Percentile Bootstrap UCL	50.18
95% BCA Bootstrap UCL	50.17		
90% Chebyshev(Mean, Sd) UCL	51.41	95% Chebyshev(Mean, Sd) UCL	52.55
97.5% Chebyshev(Mean, Sd) UCL	54.13	99% Chebyshev(Mean, Sd) UCL	57.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.94	Mean	0.965
Maximum	0.995	Median	0.968
SD	0.0202	Std. Error of Mean	0.00827
Coefficient of Variation	0.021	Skewness	0.163
Mean of logged Data	-0.0358	SD of logged Data	0.021

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.982	95% Adjusted-CLT UCL (Chen-1995)	0.979
		95% Modified-t UCL (Johnson-1978)	0.982

Nonparametric Distribution Free UCLs

95% CLT UCL	0.979	95% Jackknife UCL	0.982
95% Standard Bootstrap UCL	0.977	95% Bootstrap-t UCL	0.981
95% Hall's Bootstrap UCL	0.978	95% Percentile Bootstrap UCL	0.978
95% BCA Bootstrap UCL	0.978		
90% Chebyshev(Mean, Sd) UCL	0.99	95% Chebyshev(Mean, Sd) UCL	1.001
97.5% Chebyshev(Mean, Sd) UCL	1.017	99% Chebyshev(Mean, Sd) UCL	1.047

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.5	Mean	0.514
Maximum	0.53	Median	0.515
SD	0.0107	Std. Error of Mean	0.00436
Coefficient of Variation	0.0208	Skewness	0.137
Mean of logged Data	-0.665	SD of logged Data	0.0208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.523	95% Adjusted-CLT UCL (Chen-1995)	0.522
		95% Modified-t UCL (Johnson-1978)	0.523

Nonparametric Distribution Free UCLs

95% CLT UCL	0.521	95% Jackknife UCL	0.523
95% Standard Bootstrap UCL	0.521	95% Bootstrap-t UCL	0.523
95% Hall's Bootstrap UCL	0.522	95% Percentile Bootstrap UCL	0.521
95% BCA Bootstrap UCL	0.52		
90% Chebyshev(Mean, Sd) UCL	0.527	95% Chebyshev(Mean, Sd) UCL	0.533
97.5% Chebyshev(Mean, Sd) UCL	0.541	99% Chebyshev(Mean, Sd) UCL	0.558

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.05	Mean	2.667
Maximum	3.33	Median	2.66
SD	0.51	Std. Error of Mean	0.208
Coefficient of Variation	0.191	Skewness	0.0753
Mean of logged Data	0.965	SD of logged Data	0.194

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.086	95% Adjusted-CLT UCL (Chen-1995)	3.016
		95% Modified-t UCL (Johnson-1978)	3.088

Nonparametric Distribution Free UCLs

95% CLT UCL	3.009	95% Jackknife UCL	3.086
95% Standard Bootstrap UCL	2.964	95% Bootstrap-t UCL	3.128
95% Hall's Bootstrap UCL	3.11	95% Percentile Bootstrap UCL	2.977
95% BCA Bootstrap UCL	2.988		
90% Chebyshev(Mean, Sd) UCL	3.292	95% Chebyshev(Mean, Sd) UCL	3.575
97.5% Chebyshev(Mean, Sd) UCL	3.968	99% Chebyshev(Mean, Sd) UCL	4.739

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.86	Mean	17.64
Maximum	32.8	Median	16.79
SD	13.41	Std. Error of Mean	5.473
Coefficient of Variation	0.76	Skewness	0.067
Mean of logged Data	2.546	SD of logged Data	0.93

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.67	95% Adjusted-CLT UCL (Chen-1995)	26.8
		95% Modified-t UCL (Johnson-1978)	28.69

Nonparametric Distribution Free UCLs

95% CLT UCL	26.64	95% Jackknife UCL	28.67
95% Standard Bootstrap UCL	25.93	95% Bootstrap-t UCL	29.39
95% Hall's Bootstrap UCL	22.23	95% Percentile Bootstrap UCL	25.9
95% BCA Bootstrap UCL	25.95		
90% Chebyshev(Mean, Sd) UCL	34.06	95% Chebyshev(Mean, Sd) UCL	41.5
97.5% Chebyshev(Mean, Sd) UCL	51.82	99% Chebyshev(Mean, Sd) UCL	72.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.34	Mean	26.04
Maximum	46.9	Median	25
SD	19.31	Std. Error of Mean	7.883
Coefficient of Variation	0.742	Skewness	0.0379
Mean of logged Data	2.955	SD of logged Data	0.901

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.92	95% Adjusted-CLT UCL (Chen-1995)	39.14
		95% Modified-t UCL (Johnson-1978)	41.95

Nonparametric Distribution Free UCLs

95% CLT UCL	39.01	95% Jackknife UCL	41.92
95% Standard Bootstrap UCL	37.75	95% Bootstrap-t UCL	42.48
95% Hall's Bootstrap UCL	32.51	95% Percentile Bootstrap UCL	37.99
95% BCA Bootstrap UCL	37.93		
90% Chebyshev(Mean, Sd) UCL	49.69	95% Chebyshev(Mean, Sd) UCL	60.4
97.5% Chebyshev(Mean, Sd) UCL	75.27	99% Chebyshev(Mean, Sd) UCL	104.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.4	Mean	36.27
Maximum	66.5	Median	33.95
SD	26.97	Std. Error of Mean	11.01
Coefficient of Variation	0.744	Skewness	0.0742
Mean of logged Data	3.287	SD of logged Data	0.898

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.46	95% Adjusted-CLT UCL (Chen-1995)	54.73
		95% Modified-t UCL (Johnson-1978)	58.51

Nonparametric Distribution Free UCLs

95% CLT UCL	54.38	95% Jackknife UCL	58.46
95% Standard Bootstrap UCL	52.58	95% Bootstrap-t UCL	58.33
95% Hall's Bootstrap UCL	45.61	95% Percentile Bootstrap UCL	53.53
95% BCA Bootstrap UCL	52.5		
90% Chebyshev(Mean, Sd) UCL	69.3	95% Chebyshev(Mean, Sd) UCL	84.26
97.5% Chebyshev(Mean, Sd) UCL	105	99% Chebyshev(Mean, Sd) UCL	145.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	4.54	Mean	16.03
Maximum	29.8	Median	15.01
SD	12	Std. Error of Mean	4.898
Coefficient of Variation	0.748	Skewness	0.0804
Mean of logged Data	2.465	SD of logged Data	0.906

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.9	95% Adjusted-CLT UCL (Chen-1995)	24.26
		95% Modified-t UCL (Johnson-1978)	25.93

Nonparametric Distribution Free UCLs

95% CLT UCL	24.09	95% Jackknife UCL	25.9
95% Standard Bootstrap UCL	23.28	95% Bootstrap-t UCL	26.25
95% Hall's Bootstrap UCL	20.18	95% Percentile Bootstrap UCL	23.4
95% BCA Bootstrap UCL	23.4		
90% Chebyshev(Mean, Sd) UCL	30.72	95% Chebyshev(Mean, Sd) UCL	37.38
97.5% Chebyshev(Mean, Sd) UCL	46.62	99% Chebyshev(Mean, Sd) UCL	64.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.02	Mean	13.73
Maximum	24.7	Median	13.29
SD	10.31	Std. Error of Mean	4.209
Coefficient of Variation	0.751	Skewness	0.0303
Mean of logged Data	2.304	SD of logged Data	0.916

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.21	95% Adjusted-CLT UCL (Chen-1995)	20.7

		95% Modified-t UCL (Johnson-1978)	22.22

Nonparametric Distribution Free UCLs

95% CLT UCL	20.65	95% Jackknife UCL	22.21
95% Standard Bootstrap UCL	20.1	95% Bootstrap-t UCL	22.57
95% Hall's Bootstrap UCL	17.15	95% Percentile Bootstrap UCL	20.1
95% BCA Bootstrap UCL	20.1		
90% Chebyshev(Mean, Sd) UCL	26.35	95% Chebyshev(Mean, Sd) UCL	32.07
97.5% Chebyshev(Mean, Sd) UCL	40.01	99% Chebyshev(Mean, Sd) UCL	55.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.4	Mean	22.76
Maximum	40.6	Median	22.14
SD	17.27	Std. Error of Mean	7.049
Coefficient of Variation	0.759	Skewness	0.0217
Mean of logged Data	2.799	SD of logged Data	0.934

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.96	95% Adjusted-CLT UCL (Chen-1995)	34.42
		95% Modified-t UCL (Johnson-1978)	36.98

Nonparametric Distribution Free UCLs

95% CLT UCL	34.36	95% Jackknife UCL	36.96
95% Standard Bootstrap UCL	33.23	95% Bootstrap-t UCL	36.95
95% Hall's Bootstrap UCL	28.45	95% Percentile Bootstrap UCL	33.55
95% BCA Bootstrap UCL	33.75		
90% Chebyshev(Mean, Sd) UCL	43.91	95% Chebyshev(Mean, Sd) UCL	53.49
97.5% Chebyshev(Mean, Sd) UCL	66.78	99% Chebyshev(Mean, Sd) UCL	92.89

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.155	Mean	5.13
Maximum	7.36	Median	4.948
SD	2.094	Std. Error of Mean	0.855
Coefficient of Variation	0.408	Skewness	0.0577
Mean of logged Data	1.561	SD of logged Data	0.427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.853	95% Adjusted-CLT UCL (Chen-1995)	6.558
		95% Modified-t UCL (Johnson-1978)	6.856

Nonparametric Distribution Free UCLs

95% CLT UCL	6.536	95% Jackknife UCL	6.853
95% Standard Bootstrap UCL	6.414	95% Bootstrap-t UCL	6.77
95% Hall's Bootstrap UCL	5.849	95% Percentile Bootstrap UCL	6.468
95% BCA Bootstrap UCL	6.423		
90% Chebyshev(Mean, Sd) UCL	7.695	95% Chebyshev(Mean, Sd) UCL	8.857
97.5% Chebyshev(Mean, Sd) UCL	10.47	99% Chebyshev(Mean, Sd) UCL	13.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.1	Mean	33.53
Maximum	63.3	Median	32.3
SD	25.97	Std. Error of Mean	10.6
Coefficient of Variation	0.774	Skewness	0.0719
Mean of logged Data	3.171	SD of logged Data	0.959

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.89	95% Adjusted-CLT UCL (Chen-1995)	51.3
		95% Modified-t UCL (Johnson-1978)	54.94

Nonparametric Distribution Free UCLs

95% CLT UCL	50.97	95% Jackknife UCL	54.89

95% Standard Bootstrap UCL	49.82	95% Bootstrap-t UCL	56.42
95% Hall's Bootstrap UCL	42.44	95% Percentile Bootstrap UCL	49.75
95% BCA Bootstrap UCL	49.72		
90% Chebyshev(Mean, Sd) UCL	65.33	95% Chebyshev(Mean, Sd) UCL	79.74
97.5% Chebyshev(Mean, Sd) UCL	99.73	99% Chebyshev(Mean, Sd) UCL	139

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.255	Mean	1.288
Maximum	1.33	Median	1.29
SD	0.0262	Std. Error of Mean	0.0107
Coefficient of Variation	0.0204	Skewness	0.524
Mean of logged Data	0.253	SD of logged Data	0.0203

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.309	95% Adjusted-CLT UCL (Chen-1995)	1.308
		95% Modified-t UCL (Johnson-1978)	1.309

Nonparametric Distribution Free UCLs

95% CLT UCL	1.305	95% Jackknife UCL	1.309
95% Standard Bootstrap UCL	1.304	95% Bootstrap-t UCL	1.312
95% Hall's Bootstrap UCL	1.31	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.305		
90% Chebyshev(Mean, Sd) UCL	1.32	95% Chebyshev(Mean, Sd) UCL	1.334
97.5% Chebyshev(Mean, Sd) UCL	1.354	99% Chebyshev(Mean, Sd) UCL	1.394

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.96	Mean	19.58
Maximum	36	Median	18.07

SD	14.53	Std. Error of Mean	5.931
Coefficient of Variation	0.742	Skewness	0.0846
Mean of logged Data	2.674	SD of logged Data	0.89

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.53	95% Adjusted-CLT UCL (Chen-1995)	29.56
		95% Modified-t UCL (Johnson-1978)	31.57

Nonparametric Distribution Free UCLs

95% CLT UCL	29.34	95% Jackknife UCL	31.53
95% Standard Bootstrap UCL	28.45	95% Bootstrap-t UCL	33.95
95% Hall's Bootstrap UCL	24.6	95% Percentile Bootstrap UCL	28.86
95% BCA Bootstrap UCL	28.42		
90% Chebyshev(Mean, Sd) UCL	37.38	95% Chebyshev(Mean, Sd) UCL	45.43
97.5% Chebyshev(Mean, Sd) UCL	56.62	99% Chebyshev(Mean, Sd) UCL	78.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.94	Mean	0.965
Maximum	0.995	Median	0.968
SD	0.0202	Std. Error of Mean	0.00827
Coefficient of Variation	0.021	Skewness	0.163
Mean of logged Data	-0.0358	SD of logged Data	0.021

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.982	95% Adjusted-CLT UCL (Chen-1995)	0.979
		95% Modified-t UCL (Johnson-1978)	0.982

Nonparametric Distribution Free UCLs

95% CLT UCL	0.979	95% Jackknife UCL	0.982
95% Standard Bootstrap UCL	0.978	95% Bootstrap-t UCL	0.981
95% Hall's Bootstrap UCL	0.978	95% Percentile Bootstrap UCL	0.978
95% BCA Bootstrap UCL	0.978		
90% Chebyshev(Mean, Sd) UCL	0.99	95% Chebyshev(Mean, Sd) UCL	1.001

97.5% Chebyshev(Mean, Sd) UCL	1.017	99% Chebyshev(Mean, Sd) UCL	1.047

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.85	Mean	10.93
Maximum	20.8	Median	10.36
SD	8.435	Std. Error of Mean	3.443
Coefficient of Variation	0.772	Skewness	0.0925
Mean of logged Data	2.055	SD of logged Data	0.951

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.87	95% Adjusted-CLT UCL (Chen-1995)	16.73
		95% Modified-t UCL (Johnson-1978)	17.89

Nonparametric Distribution Free UCLs

95% CLT UCL	16.6	95% Jackknife UCL	17.87
95% Standard Bootstrap UCL	16.02	95% Bootstrap-t UCL	18.21
95% Hall's Bootstrap UCL	13.89	95% Percentile Bootstrap UCL	16.27
95% BCA Bootstrap UCL	16.27		
90% Chebyshev(Mean, Sd) UCL	21.26	95% Chebyshev(Mean, Sd) UCL	25.94
97.5% Chebyshev(Mean, Sd) UCL	32.44	99% Chebyshev(Mean, Sd) UCL	45.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.37	Mean	33.84
Maximum	61.8	Median	33.4
SD	25.91	Std. Error of Mean	10.58
Coefficient of Variation	0.766	Skewness	0.0313
Mean of logged Data	3.187	SD of logged Data	0.949

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.15	95% Adjusted-CLT UCL (Chen-1995)	51.38
		95% Modified-t UCL (Johnson-1978)	55.18

Nonparametric Distribution Free UCLs

95% CLT UCL	51.24	95% Jackknife UCL	55.15
95% Standard Bootstrap UCL	49.78	95% Bootstrap-t UCL	56.78
95% Hall's Bootstrap UCL	42.54	95% Percentile Bootstrap UCL	49.83
95% BCA Bootstrap UCL	50.3		
90% Chebyshev(Mean, Sd) UCL	65.57	95% Chebyshev(Mean, Sd) UCL	79.94
97.5% Chebyshev(Mean, Sd) UCL	99.89	99% Chebyshev(Mean, Sd) UCL	139.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:50:42 AM
From File	21078I.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.95	Mean	15.06
Maximum	16.2	Median	15.6
SD	1.567	Std. Error of Mean	0.64
Coefficient of Variation	0.104	Skewness	-2.15
Mean of logged Data	2.707	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.35	95% Adjusted-CLT UCL (Chen-1995)	15.51
		95% Modified-t UCL (Johnson-1978)	16.25

Nonparametric Distribution Free UCLs

95% CLT UCL	16.11	95% Jackknife UCL	16.35
95% Standard Bootstrap UCL	16.04	95% Bootstrap-t UCL	15.89
95% Hall's Bootstrap UCL	15.67	95% Percentile Bootstrap UCL	15.83
95% BCA Bootstrap UCL	15.73		
90% Chebyshev(Mean, Sd) UCL	16.98	95% Chebyshev(Mean, Sd) UCL	17.85
97.5% Chebyshev(Mean, Sd) UCL	19.05	99% Chebyshev(Mean, Sd) UCL	21.42

Suggested UCL to Use

95% Student's-t UCL	16.35	or 95% Modified-t UCL	16.25

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	28.3	Mean	67.78
Maximum	164	Median	55.9

SD	50.87	Std. Error of Mean	20.77
Coefficient of Variation	0.751	Skewness	1.727
Mean of logged Data	4.018	SD of logged Data	0.666

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	109.6	95% Adjusted-CLT UCL (Chen-1995)	117.6
		95% Modified-t UCL (Johnson-1978)	112.1

Nonparametric Distribution Free UCLs

95% CLT UCL	101.9	95% Jackknife UCL	109.6
95% Standard Bootstrap UCL	98.36	95% Bootstrap-t UCL	154.5
95% Hall's Bootstrap UCL	227.8	95% Percentile Bootstrap UCL	103
95% BCA Bootstrap UCL	111.3		
90% Chebyshev(Mean, Sd) UCL	130.1	95% Chebyshev(Mean, Sd) UCL	158.3
97.5% Chebyshev(Mean, Sd) UCL	197.5	99% Chebyshev(Mean, Sd) UCL	274.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51	Mean	57.25
Maximum	65.8	Median	57.55
SD	5.188	Std. Error of Mean	2.118
Coefficient of Variation	0.0906	Skewness	0.637
Mean of logged Data	4.044	SD of logged Data	0.0894

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	61.52	95% Adjusted-CLT UCL (Chen-1995)	61.32
		95% Modified-t UCL (Johnson-1978)	61.61

Nonparametric Distribution Free UCLs

95% CLT UCL	60.73	95% Jackknife UCL	61.52
95% Standard Bootstrap UCL	60.45	95% Bootstrap-t UCL	62.19
95% Hall's Bootstrap UCL	61.98	95% Percentile Bootstrap UCL	60.58
95% BCA Bootstrap UCL	60.72		
90% Chebyshev(Mean, Sd) UCL	63.6	95% Chebyshev(Mean, Sd) UCL	66.48

97.5% Chebyshev(Mean, Sd) UCL	70.48	99% Chebyshev(Mean, Sd) UCL	78.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.775	Mean	0.896
Maximum	0.97	Median	0.916
SD	0.0819	Std. Error of Mean	0.0335
Coefficient of Variation	0.0915	Skewness	-0.55
Mean of logged Data	-0.114	SD of logged Data	0.0934

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.963	95% Adjusted-CLT UCL (Chen-1995)	0.943
		95% Modified-t UCL (Johnson-1978)	0.962

Nonparametric Distribution Free UCLs

95% CLT UCL	0.951	95% Jackknife UCL	0.963
95% Standard Bootstrap UCL	0.945	95% Bootstrap-t UCL	0.955
95% Hall's Bootstrap UCL	0.934	95% Percentile Bootstrap UCL	0.947
95% BCA Bootstrap UCL	0.944		
90% Chebyshev(Mean, Sd) UCL	0.996	95% Chebyshev(Mean, Sd) UCL	1.041
97.5% Chebyshev(Mean, Sd) UCL	1.105	99% Chebyshev(Mean, Sd) UCL	1.228

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.382	Mean	0.517
Maximum	0.605	Median	0.515
SD	0.0767	Std. Error of Mean	0.0313

Coefficient of Variation	0.148	Skewness	-1.055
Mean of logged Data	-0.67	SD of logged Data	0.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.58	95% Adjusted-CLT UCL (Chen-1995)	0.554
		95% Modified-t UCL (Johnson-1978)	0.578

Nonparametric Distribution Free UCLs

95% CLT UCL	0.568	95% Jackknife UCL	0.58
95% Standard Bootstrap UCL	0.563	95% Bootstrap-t UCL	0.572
95% Hall's Bootstrap UCL	0.569	95% Percentile Bootstrap UCL	0.563
95% BCA Bootstrap UCL	0.555		
90% Chebyshev(Mean, Sd) UCL	0.611	95% Chebyshev(Mean, Sd) UCL	0.653
97.5% Chebyshev(Mean, Sd) UCL	0.712	99% Chebyshev(Mean, Sd) UCL	0.828

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.44	Mean	1.806
Maximum	2.1	Median	1.865
SD	0.321	Std. Error of Mean	0.131
Coefficient of Variation	0.178	Skewness	-0.184
Mean of logged Data	0.577	SD of logged Data	0.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.07	95% Adjusted-CLT UCL (Chen-1995)	2.011
		95% Modified-t UCL (Johnson-1978)	2.069

Nonparametric Distribution Free UCLs

95% CLT UCL	2.022	95% Jackknife UCL	2.07
95% Standard Bootstrap UCL	2	95% Bootstrap-t UCL	2.064
95% Hall's Bootstrap UCL	1.933	95% Percentile Bootstrap UCL	1.991

95% BCA Bootstrap UCL	1.99		
90% Chebyshev(Mean, Sd) UCL	2.199	95% Chebyshev(Mean, Sd) UCL	2.378
97.5% Chebyshev(Mean, Sd) UCL	2.625	99% Chebyshev(Mean, Sd) UCL	3.111

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.45	Mean	9.172
Maximum	13.2	Median	9.63
SD	4.008	Std. Error of Mean	1.636
Coefficient of Variation	0.437	Skewness	-0.167
Mean of logged Data	2.124	SD of logged Data	0.486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.47	95% Adjusted-CLT UCL (Chen-1995)	11.74
		95% Modified-t UCL (Johnson-1978)	12.45

Nonparametric Distribution Free UCLs

95% CLT UCL	11.86	95% Jackknife UCL	12.47
95% Standard Bootstrap UCL	11.6	95% Bootstrap-t UCL	12.29
95% Hall's Bootstrap UCL	10.85	95% Percentile Bootstrap UCL	11.6
95% BCA Bootstrap UCL	11.6		
90% Chebyshev(Mean, Sd) UCL	14.08	95% Chebyshev(Mean, Sd) UCL	16.3
97.5% Chebyshev(Mean, Sd) UCL	19.39	99% Chebyshev(Mean, Sd) UCL	25.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.06	Mean	13.61
Maximum	21	Median	13.66
SD	6.857	Std. Error of Mean	2.799
Coefficient of Variation	0.504	Skewness	-0.0115
Mean of logged Data	2.49	SD of logged Data	0.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.25	95% Adjusted-CLT UCL (Chen-1995)	18.2
		95% Modified-t UCL (Johnson-1978)	19.25

Nonparametric Distribution Free UCLs

95% CLT UCL	18.22	95% Jackknife UCL	19.25
95% Standard Bootstrap UCL	17.8	95% Bootstrap-t UCL	19.51
95% Hall's Bootstrap UCL	16.08	95% Percentile Bootstrap UCL	17.85
95% BCA Bootstrap UCL	17.85		
90% Chebyshev(Mean, Sd) UCL	22.01	95% Chebyshev(Mean, Sd) UCL	25.81
97.5% Chebyshev(Mean, Sd) UCL	31.09	99% Chebyshev(Mean, Sd) UCL	41.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.05	Mean	17.56
Maximum	25.9	Median	17.9
SD	8.098	Std. Error of Mean	3.306
Coefficient of Variation	0.461	Skewness	-0.0802
Mean of logged Data	2.764	SD of logged Data	0.51

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.22	95% Adjusted-CLT UCL (Chen-1995)	22.88
		95% Modified-t UCL (Johnson-1978)	24.2

Nonparametric Distribution Free UCLs

95% CLT UCL	23	95% Jackknife UCL	24.22
95% Standard Bootstrap UCL	22.63	95% Bootstrap-t UCL	24.32
95% Hall's Bootstrap UCL	20.66	95% Percentile Bootstrap UCL	22.58
95% BCA Bootstrap UCL	22.55		
90% Chebyshev(Mean, Sd) UCL	27.48	95% Chebyshev(Mean, Sd) UCL	31.97
97.5% Chebyshev(Mean, Sd) UCL	38.2	99% Chebyshev(Mean, Sd) UCL	50.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	4.02	Mean	9.182
Maximum	13.3	Median	9.565
SD	4.058	Std. Error of Mean	1.657
Coefficient of Variation	0.442	Skewness	-0.209
Mean of logged Data	2.12	SD of logged Data	0.504

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.52	95% Adjusted-CLT UCL (Chen-1995)	11.76
		95% Modified-t UCL (Johnson-1978)	12.5

Nonparametric Distribution Free UCLs

95% CLT UCL	11.91	95% Jackknife UCL	12.52
95% Standard Bootstrap UCL	11.67	95% Bootstrap-t UCL	12.45
95% Hall's Bootstrap UCL	11.09	95% Percentile Bootstrap UCL	11.66
95% BCA Bootstrap UCL	11.44		
90% Chebyshev(Mean, Sd) UCL	14.15	95% Chebyshev(Mean, Sd) UCL	16.4
97.5% Chebyshev(Mean, Sd) UCL	19.53	99% Chebyshev(Mean, Sd) UCL	25.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.43	Mean	7.733
Maximum	11	Median	8.47
SD	3.252	Std. Error of Mean	1.327
Coefficient of Variation	0.42	Skewness	-0.458
Mean of logged Data	1.954	SD of logged Data	0.494

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.41	95% Adjusted-CLT UCL (Chen-1995)	9.652
		95% Modified-t UCL (Johnson-1978)	10.37

Nonparametric Distribution Free UCLs

95% CLT UCL	9.917	95% Jackknife UCL	10.41
95% Standard Bootstrap UCL	9.756	95% Bootstrap-t UCL	9.998
95% Hall's Bootstrap UCL	9.275	95% Percentile Bootstrap UCL	9.663
95% BCA Bootstrap UCL	9.51		
90% Chebyshev(Mean, Sd) UCL	11.72	95% Chebyshev(Mean, Sd) UCL	13.52
97.5% Chebyshev(Mean, Sd) UCL	16.02	99% Chebyshev(Mean, Sd) UCL	20.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	5.77	Mean	13.46
Maximum	19.8	Median	13.86
SD	6.417	Std. Error of Mean	2.62
Coefficient of Variation	0.477	Skewness	-0.113
Mean of logged Data	2.489	SD of logged Data	0.536

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.74	95% Adjusted-CLT UCL (Chen-1995)	17.64
		95% Modified-t UCL (Johnson-1978)	18.72

Nonparametric Distribution Free UCLs

95% CLT UCL	17.77	95% Jackknife UCL	18.74
95% Standard Bootstrap UCL	17.43	95% Bootstrap-t UCL	18.74
95% Hall's Bootstrap UCL	16.05	95% Percentile Bootstrap UCL	17.46
95% BCA Bootstrap UCL	17.19		
90% Chebyshev(Mean, Sd) UCL	21.32	95% Chebyshev(Mean, Sd) UCL	24.88
97.5% Chebyshev(Mean, Sd) UCL	29.82	99% Chebyshev(Mean, Sd) UCL	39.53

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.195	Mean	4.004
Maximum	5.68	Median	3.915
SD	0.909	Std. Error of Mean	0.371
Coefficient of Variation	0.227	Skewness	1.476
Mean of logged Data	1.368	SD of logged Data	0.211

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.752	95% Adjusted-CLT UCL (Chen-1995)	4.854
		95% Modified-t UCL (Johnson-1978)	4.789

Nonparametric Distribution Free UCLs

95% CLT UCL	4.615	95% Jackknife UCL	4.752
95% Standard Bootstrap UCL	4.571	95% Bootstrap-t UCL	5.131
95% Hall's Bootstrap UCL	7.351	95% Percentile Bootstrap UCL	4.583
95% BCA Bootstrap UCL	4.775		
90% Chebyshev(Mean, Sd) UCL	5.118	95% Chebyshev(Mean, Sd) UCL	5.622
97.5% Chebyshev(Mean, Sd) UCL	6.322	99% Chebyshev(Mean, Sd) UCL	7.698

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8	Mean	17.91
Maximum	28.6	Median	17.3
SD	10.32	Std. Error of Mean	4.213
Coefficient of Variation	0.576	Skewness	0.0407
Mean of logged Data	2.724	SD of logged Data	0.639

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.4	95% Adjusted-CLT UCL (Chen-1995)	24.92
		95% Modified-t UCL (Johnson-1978)	26.42

Nonparametric Distribution Free UCLs

95% CLT UCL	24.84	95% Jackknife UCL	26.4
95% Standard Bootstrap UCL	24.16	95% Bootstrap-t UCL	25.96
95% Hall's Bootstrap UCL	21.49	95% Percentile Bootstrap UCL	24.4
95% BCA Bootstrap UCL	24.5		
90% Chebyshev(Mean, Sd) UCL	30.55	95% Chebyshev(Mean, Sd) UCL	36.28
97.5% Chebyshev(Mean, Sd) UCL	44.23	99% Chebyshev(Mean, Sd) UCL	59.84

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.24	Mean	1.281
Maximum	1.295	Median	1.29
SD	0.0206	Std. Error of Mean	0.00841
Coefficient of Variation	0.0161	Skewness	-2.161
Mean of logged Data	0.247	SD of logged Data	0.0163

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.298	95% Adjusted-CLT UCL (Chen-1995)	1.287
		95% Modified-t UCL (Johnson-1978)	1.297

Nonparametric Distribution Free UCLs

95% CLT UCL	1.295	95% Jackknife UCL	1.298
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.306	95% Chebyshev(Mean, Sd) UCL	1.317
97.5% Chebyshev(Mean, Sd) UCL	1.333	99% Chebyshev(Mean, Sd) UCL	1.364

Suggested UCL to Use

95% Student's-t UCL	1.298	or 95% Modified-t UCL	1.297

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.43	Mean	11.21
Maximum	15.6	Median	11.87
SD	4.261	Std. Error of Mean	1.74
Coefficient of Variation	0.38	Skewness	-0.336
Mean of logged Data	2.346	SD of logged Data	0.429

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.72	95% Adjusted-CLT UCL (Chen-1995)	13.82
		95% Modified-t UCL (Johnson-1978)	14.68

Nonparametric Distribution Free UCLs

95% CLT UCL	14.07	95% Jackknife UCL	14.72
95% Standard Bootstrap UCL	13.82	95% Bootstrap-t UCL	14.5
95% Hall's Bootstrap UCL	13.13	95% Percentile Bootstrap UCL	13.72
95% BCA Bootstrap UCL	13.62		
90% Chebyshev(Mean, Sd) UCL	16.43	95% Chebyshev(Mean, Sd) UCL	18.79
97.5% Chebyshev(Mean, Sd) UCL	22.07	99% Chebyshev(Mean, Sd) UCL	28.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.696	Mean	1.109
Maximum	1.65	Median	1.063
SD	0.453	Std. Error of Mean	0.185
Coefficient of Variation	0.409	Skewness	0.117
Mean of logged Data	0.0291	SD of logged Data	0.425

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.482	95% Adjusted-CLT UCL (Chen-1995)	1.422
		95% Modified-t UCL (Johnson-1978)	1.483

Nonparametric Distribution Free UCLs

95% CLT UCL	1.413	95% Jackknife UCL	1.482
95% Standard Bootstrap UCL	1.382	95% Bootstrap-t UCL	1.507
95% Hall's Bootstrap UCL	1.265	95% Percentile Bootstrap UCL	1.397
95% BCA Bootstrap UCL	1.386		
90% Chebyshev(Mean, Sd) UCL	1.664	95% Chebyshev(Mean, Sd) UCL	1.915
97.5% Chebyshev(Mean, Sd) UCL	2.265	99% Chebyshev(Mean, Sd) UCL	2.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.33	Mean	6.865
Maximum	11.2	Median	6.425
SD	3.764	Std. Error of Mean	1.537
Coefficient of Variation	0.548	Skewness	0.116
Mean of logged Data	1.785	SD of logged Data	0.594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.962	95% Adjusted-CLT UCL (Chen-1995)	9.47
		95% Modified-t UCL (Johnson-1978)	9.974

Nonparametric Distribution Free UCLs

95% CLT UCL	9.393	95% Jackknife UCL	9.962
95% Standard Bootstrap UCL	9.182	95% Bootstrap-t UCL	10.77
95% Hall's Bootstrap UCL	8.191	95% Percentile Bootstrap UCL	9.278
95% BCA Bootstrap UCL	9.342		
90% Chebyshev(Mean, Sd) UCL	11.48	95% Chebyshev(Mean, Sd) UCL	13.56
97.5% Chebyshev(Mean, Sd) UCL	16.46	99% Chebyshev(Mean, Sd) UCL	22.16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.59	Mean	17.56
Maximum	28	Median	17.02
SD	10.28	Std. Error of Mean	4.198
Coefficient of Variation	0.586	Skewness	0.0387
Mean of logged Data	2.698	SD of logged Data	0.653

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.02	95% Adjusted-CLT UCL (Chen-1995)	24.53
		95% Modified-t UCL (Johnson-1978)	26.03

Nonparametric Distribution Free UCLs

95% CLT UCL	24.46	95% Jackknife UCL	26.02
95% Standard Bootstrap UCL	23.81	95% Bootstrap-t UCL	27.25
95% Hall's Bootstrap UCL	21.19	95% Percentile Bootstrap UCL	24.05
95% BCA Bootstrap UCL	24.06		
90% Chebyshev(Mean, Sd) UCL	30.15	95% Chebyshev(Mean, Sd) UCL	35.86
97.5% Chebyshev(Mean, Sd) UCL	43.77	99% Chebyshev(Mean, Sd) UCL	59.33

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:52:03 AM
From File	21078J.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.4	Mean	15.8
Maximum	17.1	Median	16.05
SD	1.086	Std. Error of Mean	0.443
Coefficient of Variation	0.0688	Skewness	-0.397
Mean of logged Data	2.758	SD of logged Data	0.0695

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.69	95% Adjusted-CLT UCL (Chen-1995)	16.45
		95% Modified-t UCL (Johnson-1978)	16.68

Nonparametric Distribution Free UCLs

95% CLT UCL	16.53	95% Jackknife UCL	16.69
95% Standard Bootstrap UCL	16.48	95% Bootstrap-t UCL	16.55
95% Hall's Bootstrap UCL	16.34	95% Percentile Bootstrap UCL	16.45
95% BCA Bootstrap UCL	16.43		
90% Chebyshev(Mean, Sd) UCL	17.13	95% Chebyshev(Mean, Sd) UCL	17.73
97.5% Chebyshev(Mean, Sd) UCL	18.57	99% Chebyshev(Mean, Sd) UCL	20.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	31.2	Mean	93.53
Maximum	203	Median	75.7
SD	62.93	Std. Error of Mean	25.69
Coefficient of Variation	0.673	Skewness	1.179

Mean of logged Data	4.353	SD of logged Data	0.672

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	145.3	95% Adjusted-CLT UCL (Chen-1995)	149
		95% Modified-t UCL (Johnson-1978)	147.4

Nonparametric Distribution Free UCLs

95% CLT UCL	135.8	95% Jackknife UCL	145.3
95% Standard Bootstrap UCL	132.1	95% Bootstrap-t UCL	199.3
95% Hall's Bootstrap UCL	346.2	95% Percentile Bootstrap UCL	134.9
95% BCA Bootstrap UCL	140.5		
90% Chebyshev(Mean, Sd) UCL	170.6	95% Chebyshev(Mean, Sd) UCL	205.5
97.5% Chebyshev(Mean, Sd) UCL	254	99% Chebyshev(Mean, Sd) UCL	349.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	50.6	Mean	54.57
Maximum	57.6	Median	54.9
SD	2.434	Std. Error of Mean	0.994
Coefficient of Variation	0.0446	Skewness	-0.673
Mean of logged Data	3.999	SD of logged Data	0.0451

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.57	95% Adjusted-CLT UCL (Chen-1995)	55.91
		95% Modified-t UCL (Johnson-1978)	56.52

Nonparametric Distribution Free UCLs

95% CLT UCL	56.2	95% Jackknife UCL	56.57
95% Standard Bootstrap UCL	56.03	95% Bootstrap-t UCL	56.28
95% Hall's Bootstrap UCL	55.97	95% Percentile Bootstrap UCL	55.98
95% BCA Bootstrap UCL	55.92		
90% Chebyshev(Mean, Sd) UCL	57.55	95% Chebyshev(Mean, Sd) UCL	58.9
97.5% Chebyshev(Mean, Sd) UCL	60.77	99% Chebyshev(Mean, Sd) UCL	64.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.605	Mean	6.632
Maximum	35.7	Median	0.894
SD	14.24	Std. Error of Mean	5.814
Coefficient of Variation	2.147	Skewness	2.449
Mean of logged Data	0.419	SD of logged Data	1.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.35	95% Adjusted-CLT UCL (Chen-1995)	22.41
		95% Modified-t UCL (Johnson-1978)	19.32

Nonparametric Distribution Free UCLs

95% CLT UCL	16.19	95% Jackknife UCL	18.35
95% Standard Bootstrap UCL	15.38	95% Bootstrap-t UCL	1356
95% Hall's Bootstrap UCL	709.5	95% Percentile Bootstrap UCL	18.25
95% BCA Bootstrap UCL	18.3		
90% Chebyshev(Mean, Sd) UCL	24.07	95% Chebyshev(Mean, Sd) UCL	31.97
97.5% Chebyshev(Mean, Sd) UCL	42.94	99% Chebyshev(Mean, Sd) UCL	64.48

Suggested UCL to Use

95% Hall's Bootstrap UCL 709.5

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.475	Mean	7.511

Maximum	41.6	Median	0.785
SD	16.7	Std. Error of Mean	6.818
Coefficient of Variation	2.224	Skewness	2.449
Mean of logged Data	0.286	SD of logged Data	1.707

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.25	95% Adjusted-CLT UCL (Chen-1995)	26.01
		95% Modified-t UCL (Johnson-1978)	22.39

Nonparametric Distribution Free UCLs

95% CLT UCL	18.73	95% Jackknife UCL	21.25
95% Standard Bootstrap UCL	17.92	95% Bootstrap-t UCL	743.1
95% Hall's Bootstrap UCL	527.3	95% Percentile Bootstrap UCL	21.11
95% BCA Bootstrap UCL	27.96		
90% Chebyshev(Mean, Sd) UCL	27.97	95% Chebyshev(Mean, Sd) UCL	37.23
97.5% Chebyshev(Mean, Sd) UCL	50.09	99% Chebyshev(Mean, Sd) UCL	75.35

Suggested UCL to Use

95% Hall's Bootstrap UCL	527.3

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.93	Mean	9.139
Maximum	43.3	Median	2.385
SD	16.74	Std. Error of Mean	6.833
Coefficient of Variation	1.831	Skewness	2.448
Mean of logged Data	1.317	SD of logged Data	1.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.91	95% Adjusted-CLT UCL (Chen-1995)	27.67
		95% Modified-t UCL (Johnson-1978)	24.05

Nonparametric Distribution Free UCLs

95% CLT UCL	20.38	95% Jackknife UCL	22.91
95% Standard Bootstrap UCL	19.37	95% Bootstrap-t UCL	505.4
95% Hall's Bootstrap UCL	348.8	95% Percentile Bootstrap UCL	22.71
95% BCA Bootstrap UCL	22.94		
90% Chebyshev(Mean, Sd) UCL	29.64	95% Chebyshev(Mean, Sd) UCL	38.92
97.5% Chebyshev(Mean, Sd) UCL	51.81	99% Chebyshev(Mean, Sd) UCL	77.13

Suggested UCL to Use

95% Hall's Bootstrap UCL 348.8

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.92	Mean	21.57
Maximum	51.7	Median	21
SD	17.04	Std. Error of Mean	6.955
Coefficient of Variation	0.79	Skewness	1.133
Mean of logged Data	2.756	SD of logged Data	0.941

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.59	95% Adjusted-CLT UCL (Chen-1995)	36.45
		95% Modified-t UCL (Johnson-1978)	36.12

Nonparametric Distribution Free UCLs

95% CLT UCL	33.01	95% Jackknife UCL	35.59
95% Standard Bootstrap UCL	32.05	95% Bootstrap-t UCL	40.06
95% Hall's Bootstrap UCL	78.06	95% Percentile Bootstrap UCL	32.57
95% BCA Bootstrap UCL	34.8		
90% Chebyshev(Mean, Sd) UCL	42.44	95% Chebyshev(Mean, Sd) UCL	51.89
97.5% Chebyshev(Mean, Sd) UCL	65.01	99% Chebyshev(Mean, Sd) UCL	90.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.81	Mean	26.12
Maximum	48.1	Median	29.75
SD	16.09	Std. Error of Mean	6.568
Coefficient of Variation	0.616	Skewness	-0.162
Mean of logged Data	3.022	SD of logged Data	0.847

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.35	95% Adjusted-CLT UCL (Chen-1995)	36.45
		95% Modified-t UCL (Johnson-1978)	39.28

Nonparametric Distribution Free UCLs

95% CLT UCL	36.92	95% Jackknife UCL	39.35
95% Standard Bootstrap UCL	35.85	95% Bootstrap-t UCL	38.83
95% Hall's Bootstrap UCL	35.27	95% Percentile Bootstrap UCL	35.58
95% BCA Bootstrap UCL	35.47		
90% Chebyshev(Mean, Sd) UCL	45.82	95% Chebyshev(Mean, Sd) UCL	54.75
97.5% Chebyshev(Mean, Sd) UCL	67.13	99% Chebyshev(Mean, Sd) UCL	91.47

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.34	Mean	25.34
Maximum	46.1	Median	24.5
SD	17.25	Std. Error of Mean	7.044
Coefficient of Variation	0.681	Skewness	0.0957
Mean of logged Data	2.988	SD of logged Data	0.804

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.53	95% Adjusted-CLT UCL (Chen-1995)	37.22

		95% Modified-t UCL (Johnson-1978)	39.58

Nonparametric Distribution Free UCLs

95% CLT UCL	36.93	95% Jackknife UCL	39.53
95% Standard Bootstrap UCL	35.99	95% Bootstrap-t UCL	40.91
95% Hall's Bootstrap UCL	31.69	95% Percentile Bootstrap UCL	35.82
95% BCA Bootstrap UCL	36.57		
90% Chebyshev(Mean, Sd) UCL	46.47	95% Chebyshev(Mean, Sd) UCL	56.04
97.5% Chebyshev(Mean, Sd) UCL	69.33	99% Chebyshev(Mean, Sd) UCL	95.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.81	Mean	13.56
Maximum	24.4	Median	13.08
SD	9.186	Std. Error of Mean	3.75
Coefficient of Variation	0.678	Skewness	0.0728
Mean of logged Data	2.363	SD of logged Data	0.805

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.11	95% Adjusted-CLT UCL (Chen-1995)	19.84
		95% Modified-t UCL (Johnson-1978)	21.13

Nonparametric Distribution Free UCLs

95% CLT UCL	19.72	95% Jackknife UCL	21.11
95% Standard Bootstrap UCL	19.28	95% Bootstrap-t UCL	21.92
95% Hall's Bootstrap UCL	16.9	95% Percentile Bootstrap UCL	19.3
95% BCA Bootstrap UCL	19.46		
90% Chebyshev(Mean, Sd) UCL	24.81	95% Chebyshev(Mean, Sd) UCL	29.9
97.5% Chebyshev(Mean, Sd) UCL	36.97	99% Chebyshev(Mean, Sd) UCL	50.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.19	Mean	11.08
Maximum	19.7	Median	10.77
SD	7.373	Std. Error of Mean	3.01
Coefficient of Variation	0.666	Skewness	0.0592
Mean of logged Data	2.171	SD of logged Data	0.788

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.14	95% Adjusted-CLT UCL (Chen-1995)	16.11
		95% Modified-t UCL (Johnson-1978)	17.15

Nonparametric Distribution Free UCLs

95% CLT UCL	16.03	95% Jackknife UCL	17.14
95% Standard Bootstrap UCL	15.6	95% Bootstrap-t UCL	17.81
95% Hall's Bootstrap UCL	13.78	95% Percentile Bootstrap UCL	15.72
95% BCA Bootstrap UCL	15.4		
90% Chebyshev(Mean, Sd) UCL	20.11	95% Chebyshev(Mean, Sd) UCL	24.2
97.5% Chebyshev(Mean, Sd) UCL	29.87	99% Chebyshev(Mean, Sd) UCL	41.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.49	Mean	27.31
Maximum	54.4	Median	30
SD	18.06	Std. Error of Mean	7.373
Coefficient of Variation	0.661	Skewness	0.186
Mean of logged Data	3.039	SD of logged Data	0.893

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.17	95% Adjusted-CLT UCL (Chen-1995)	40.04
		95% Modified-t UCL (Johnson-1978)	42.26

Nonparametric Distribution Free UCLs

95% CLT UCL	39.44	95% Jackknife UCL	42.17

95% Standard Bootstrap UCL	38.44	95% Bootstrap-t UCL	42.81
95% Hall's Bootstrap UCL	39.09	95% Percentile Bootstrap UCL	38.87
95% BCA Bootstrap UCL	38.12		
90% Chebyshev(Mean, Sd) UCL	49.43	95% Chebyshev(Mean, Sd) UCL	59.45
97.5% Chebyshev(Mean, Sd) UCL	73.36	99% Chebyshev(Mean, Sd) UCL	100.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.64	Mean	4.538
Maximum	6.87	Median	4.525
SD	1.7	Std. Error of Mean	0.694
Coefficient of Variation	0.375	Skewness	0.213
Mean of logged Data	1.451	SD of logged Data	0.389

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.937	95% Adjusted-CLT UCL (Chen-1995)	5.744
		95% Modified-t UCL (Johnson-1978)	5.947

Nonparametric Distribution Free UCLs

95% CLT UCL	5.68	95% Jackknife UCL	5.937
95% Standard Bootstrap UCL	5.58	95% Bootstrap-t UCL	6.154
95% Hall's Bootstrap UCL	5.375	95% Percentile Bootstrap UCL	5.588
95% BCA Bootstrap UCL	5.605		
90% Chebyshev(Mean, Sd) UCL	6.621	95% Chebyshev(Mean, Sd) UCL	7.564
97.5% Chebyshev(Mean, Sd) UCL	8.873	99% Chebyshev(Mean, Sd) UCL	11.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.21	Mean	34.19
Maximum	50.5	Median	41.8

SD	18.81	Std. Error of Mean	7.678
Coefficient of Variation	0.55	Skewness	-0.85
Mean of logged Data	3.318	SD of logged Data	0.816

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.66	95% Adjusted-CLT UCL (Chen-1995)	43.97
		95% Modified-t UCL (Johnson-1978)	49.21

Nonparametric Distribution Free UCLs

95% CLT UCL	46.81	95% Jackknife UCL	49.66
95% Standard Bootstrap UCL	45.58	95% Bootstrap-t UCL	46.09
95% Hall's Bootstrap UCL	41.97	95% Percentile Bootstrap UCL	45.7
95% BCA Bootstrap UCL	43.9		
90% Chebyshev(Mean, Sd) UCL	57.22	95% Chebyshev(Mean, Sd) UCL	67.65
97.5% Chebyshev(Mean, Sd) UCL	82.14	99% Chebyshev(Mean, Sd) UCL	110.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.19	Mean	1.243
Maximum	1.29	Median	1.25
SD	0.0389	Std. Error of Mean	0.0159
Coefficient of Variation	0.0313	Skewness	-0.376
Mean of logged Data	0.217	SD of logged Data	0.0315

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.275	95% Adjusted-CLT UCL (Chen-1995)	1.267
		95% Modified-t UCL (Johnson-1978)	1.275

Nonparametric Distribution Free UCLs

95% CLT UCL	1.269	95% Jackknife UCL	1.275
95% Standard Bootstrap UCL	1.267	95% Bootstrap-t UCL	1.271

95% Hall's Bootstrap UCL	1.266	95% Percentile Bootstrap UCL	1.268
95% BCA Bootstrap UCL	1.267		
90% Chebyshev(Mean, Sd) UCL	1.291	95% Chebyshev(Mean, Sd) UCL	1.313
97.5% Chebyshev(Mean, Sd) UCL	1.343	99% Chebyshev(Mean, Sd) UCL	1.402

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.03	Mean	16.55
Maximum	30.1	Median	15.08
SD	11.03	Std. Error of Mean	4.503
Coefficient of Variation	0.667	Skewness	0.159
Mean of logged Data	2.578	SD of logged Data	0.772

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.62	95% Adjusted-CLT UCL (Chen-1995)	24.26
		95% Modified-t UCL (Johnson-1978)	25.67

Nonparametric Distribution Free UCLs

95% CLT UCL	23.95	95% Jackknife UCL	25.62
95% Standard Bootstrap UCL	23.35	95% Bootstrap-t UCL	28.24
95% Hall's Bootstrap UCL	20.89	95% Percentile Bootstrap UCL	23.86
95% BCA Bootstrap UCL	23.42		
90% Chebyshev(Mean, Sd) UCL	30.05	95% Chebyshev(Mean, Sd) UCL	36.17
97.5% Chebyshev(Mean, Sd) UCL	44.66	99% Chebyshev(Mean, Sd) UCL	61.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.678	Mean	7.596
Maximum	39.4	Median	1.46
SD	15.59	Std. Error of Mean	6.363
Coefficient of Variation	2.052	Skewness	2.447
Mean of logged Data	0.746	SD of logged Data	1.472

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.42	95% Adjusted-CLT UCL (Chen-1995)	24.85
		95% Modified-t UCL (Johnson-1978)	21.48

Nonparametric Distribution Free UCLs

95% CLT UCL	18.06	95% Jackknife UCL	20.42
95% Standard Bootstrap UCL	17.23	95% Bootstrap-t UCL	372.1
95% Hall's Bootstrap UCL	297.9	95% Percentile Bootstrap UCL	20.24
95% BCA Bootstrap UCL	20.47		
90% Chebyshev(Mean, Sd) UCL	26.68	95% Chebyshev(Mean, Sd) UCL	35.33
97.5% Chebyshev(Mean, Sd) UCL	47.33	99% Chebyshev(Mean, Sd) UCL	70.9

Suggested UCL to Use

95% Hall's Bootstrap UCL	297.9

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.1	Mean	18.23
Maximum	47.4	Median	16.75
SD	15.64	Std. Error of Mean	6.384
Coefficient of Variation	0.858	Skewness	1.547
Mean of logged Data	2.572	SD of logged Data	0.947

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.09	95% Adjusted-CLT UCL (Chen-1995)	33.04
		95% Modified-t UCL (Johnson-1978)	31.77

Nonparametric Distribution Free UCLs

95% CLT UCL	28.73	95% Jackknife UCL	31.09
95% Standard Bootstrap UCL	27.7	95% Bootstrap-t UCL	37.77
95% Hall's Bootstrap UCL	76.46	95% Percentile Bootstrap UCL	28.08
95% BCA Bootstrap UCL	30.36		
90% Chebyshev(Mean, Sd) UCL	37.38	95% Chebyshev(Mean, Sd) UCL	46.06
97.5% Chebyshev(Mean, Sd) UCL	58.1	99% Chebyshev(Mean, Sd) UCL	81.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.01	Mean	33.57
Maximum	49.9	Median	41.35
SD	18.82	Std. Error of Mean	7.683
Coefficient of Variation	0.561	Skewness	-0.844
Mean of logged Data	3.289	SD of logged Data	0.835

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.05	95% Adjusted-CLT UCL (Chen-1995)	43.38
		95% Modified-t UCL (Johnson-1978)	48.61

Nonparametric Distribution Free UCLs

95% CLT UCL	46.21	95% Jackknife UCL	49.05
95% Standard Bootstrap UCL	45.06	95% Bootstrap-t UCL	45.63
95% Hall's Bootstrap UCL	41.33	95% Percentile Bootstrap UCL	45.37
95% BCA Bootstrap UCL	43.68		
90% Chebyshev(Mean, Sd) UCL	56.62	95% Chebyshev(Mean, Sd) UCL	67.06
97.5% Chebyshev(Mean, Sd) UCL	81.55	99% Chebyshev(Mean, Sd) UCL	110

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:55:42 AM
From File	21078K.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.1	Mean	12.38
Maximum	14.8	Median	13.5
SD	3.349	Std. Error of Mean	1.367
Coefficient of Variation	0.27	Skewness	-1.685
Mean of logged Data	2.475	SD of logged Data	0.341

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.14	95% Adjusted-CLT UCL (Chen-1995)	13.63
		95% Modified-t UCL (Johnson-1978)	14.98

Nonparametric Distribution Free UCLs

95% CLT UCL	14.63	95% Jackknife UCL	15.14
95% Standard Bootstrap UCL	14.45	95% Bootstrap-t UCL	14.27
95% Hall's Bootstrap UCL	13.84	95% Percentile Bootstrap UCL	14.23
95% BCA Bootstrap UCL	13.87		
90% Chebyshev(Mean, Sd) UCL	16.48	95% Chebyshev(Mean, Sd) UCL	18.34
97.5% Chebyshev(Mean, Sd) UCL	20.92	99% Chebyshev(Mean, Sd) UCL	25.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.1	Mean	38.6
Maximum	59.3	Median	38.1
SD	16.39	Std. Error of Mean	6.691
Coefficient of Variation	0.425	Skewness	0.104

Mean of logged Data	3.571	SD of logged Data	0.455

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.08	95% Adjusted-CLT UCL (Chen-1995)	49.91
		95% Modified-t UCL (Johnson-1978)	52.13

Nonparametric Distribution Free UCLs

95% CLT UCL	49.61	95% Jackknife UCL	52.08
95% Standard Bootstrap UCL	48.85	95% Bootstrap-t UCL	51.44
95% Hall's Bootstrap UCL	48.65	95% Percentile Bootstrap UCL	48.75
95% BCA Bootstrap UCL	48.75		
90% Chebyshev(Mean, Sd) UCL	58.67	95% Chebyshev(Mean, Sd) UCL	67.77
97.5% Chebyshev(Mean, Sd) UCL	80.39	99% Chebyshev(Mean, Sd) UCL	105.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.4	Mean	48.18
Maximum	52.5	Median	47.95
SD	3.386	Std. Error of Mean	1.382
Coefficient of Variation	0.0703	Skewness	0.17
Mean of logged Data	3.873	SD of logged Data	0.0701

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.97	95% Adjusted-CLT UCL (Chen-1995)	50.56
		95% Modified-t UCL (Johnson-1978)	50.98

Nonparametric Distribution Free UCLs

95% CLT UCL	50.46	95% Jackknife UCL	50.97
95% Standard Bootstrap UCL	50.21	95% Bootstrap-t UCL	51.64
95% Hall's Bootstrap UCL	50.41	95% Percentile Bootstrap UCL	50.25
95% BCA Bootstrap UCL	50.32		
90% Chebyshev(Mean, Sd) UCL	52.33	95% Chebyshev(Mean, Sd) UCL	54.21
97.5% Chebyshev(Mean, Sd) UCL	56.81	99% Chebyshev(Mean, Sd) UCL	61.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.94	Mean	0.969
Maximum	0.985	Median	0.975
SD	0.0176	Std. Error of Mean	0.00721
Coefficient of Variation	0.0182	Skewness	-0.963
Mean of logged Data	-0.0321	SD of logged Data	0.0183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.983	95% Adjusted-CLT UCL (Chen-1995)	0.977
		95% Modified-t UCL (Johnson-1978)	0.983

Nonparametric Distribution Free UCLs

95% CLT UCL	0.98	95% Jackknife UCL	0.983
95% Standard Bootstrap UCL	0.979	95% Bootstrap-t UCL	0.98
95% Hall's Bootstrap UCL	0.977	95% Percentile Bootstrap UCL	0.979
95% BCA Bootstrap UCL	0.977		
90% Chebyshev(Mean, Sd) UCL	0.99	95% Chebyshev(Mean, Sd) UCL	1
97.5% Chebyshev(Mean, Sd) UCL	1.013	99% Chebyshev(Mean, Sd) UCL	1.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.51	Mean	0.665
Maximum	1.03	Median	0.601
SD	0.201	Std. Error of Mean	0.082
Coefficient of Variation	0.302	Skewness	1.458
Mean of logged Data	-0.442	SD of logged Data	0.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.83	95% Adjusted-CLT UCL (Chen-1995)	0.852
		95% Modified-t UCL (Johnson-1978)	0.838

Nonparametric Distribution Free UCLs

95% CLT UCL	0.8	95% Jackknife UCL	0.83
95% Standard Bootstrap UCL	0.785	95% Bootstrap-t UCL	0.927
95% Hall's Bootstrap UCL	0.923	95% Percentile Bootstrap UCL	0.803
95% BCA Bootstrap UCL	0.834		
90% Chebyshev(Mean, Sd) UCL	0.911	95% Chebyshev(Mean, Sd) UCL	1.022
97.5% Chebyshev(Mean, Sd) UCL	1.177	99% Chebyshev(Mean, Sd) UCL	1.481

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	2.18
Maximum	2.56	Median	2.125
SD	0.202	Std. Error of Mean	0.0825
Coefficient of Variation	0.0927	Skewness	1.645
Mean of logged Data	0.776	SD of logged Data	0.0887

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.346	95% Adjusted-CLT UCL (Chen-1995)	2.375
		95% Modified-t UCL (Johnson-1978)	2.355

Nonparametric Distribution Free UCLs

95% CLT UCL	2.316	95% Jackknife UCL	2.346
95% Standard Bootstrap UCL	2.306	95% Bootstrap-t UCL	2.51
95% Hall's Bootstrap UCL	3.082	95% Percentile Bootstrap UCL	2.31
95% BCA Bootstrap UCL	2.343		
90% Chebyshev(Mean, Sd) UCL	2.428	95% Chebyshev(Mean, Sd) UCL	2.54
97.5% Chebyshev(Mean, Sd) UCL	2.695	99% Chebyshev(Mean, Sd) UCL	3.001

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	12.94
Maximum	26.5	Median	12.4
SD	10.65	Std. Error of Mean	4.346
Coefficient of Variation	0.823	Skewness	0.165
Mean of logged Data	2.144	SD of logged Data	1.088

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.7	95% Adjusted-CLT UCL (Chen-1995)	20.4
		95% Modified-t UCL (Johnson-1978)	21.75

Nonparametric Distribution Free UCLs

95% CLT UCL	20.09	95% Jackknife UCL	21.7
95% Standard Bootstrap UCL	19.52	95% Bootstrap-t UCL	22.92
95% Hall's Bootstrap UCL	17.03	95% Percentile Bootstrap UCL	19.51
95% BCA Bootstrap UCL	19.58		
90% Chebyshev(Mean, Sd) UCL	25.98	95% Chebyshev(Mean, Sd) UCL	31.88
97.5% Chebyshev(Mean, Sd) UCL	40.08	99% Chebyshev(Mean, Sd) UCL	56.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	18.07
Maximum	39	Median	16.6
SD	16.14	Std. Error of Mean	6.591
Coefficient of Variation	0.893	Skewness	0.205
Mean of logged Data	2.361	SD of logged Data	1.252

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.35	95% Adjusted-CLT UCL (Chen-1995)	29.5
		95% Modified-t UCL (Johnson-1978)	31.44

Nonparametric Distribution Free UCLs

95% CLT UCL	28.91	95% Jackknife UCL	31.35
95% Standard Bootstrap UCL	27.93	95% Bootstrap-t UCL	33.92
95% Hall's Bootstrap UCL	24.31	95% Percentile Bootstrap UCL	28.23
95% BCA Bootstrap UCL	28.39		
90% Chebyshev(Mean, Sd) UCL	37.84	95% Chebyshev(Mean, Sd) UCL	46.8
97.5% Chebyshev(Mean, Sd) UCL	59.23	99% Chebyshev(Mean, Sd) UCL	83.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	23.27
Maximum	44.9	Median	23.7
SD	18.27	Std. Error of Mean	7.459
Coefficient of Variation	0.785	Skewness	0.0421
Mean of logged Data	2.75	SD of logged Data	1.086

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.3	95% Adjusted-CLT UCL (Chen-1995)	35.68
		95% Modified-t UCL (Johnson-1978)	38.32

Nonparametric Distribution Free UCLs

95% CLT UCL	35.54	95% Jackknife UCL	38.3
95% Standard Bootstrap UCL	34.74	95% Bootstrap-t UCL	39.86
95% Hall's Bootstrap UCL	30.25	95% Percentile Bootstrap UCL	33.98
95% BCA Bootstrap UCL	34.64		
90% Chebyshev(Mean, Sd) UCL	45.65	95% Chebyshev(Mean, Sd) UCL	55.78
97.5% Chebyshev(Mean, Sd) UCL	69.85	99% Chebyshev(Mean, Sd) UCL	97.49

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	12.13
Maximum	23.8	Median	11.38
SD	9.803	Std. Error of Mean	4.002
Coefficient of Variation	0.808	Skewness	0.108
Mean of logged Data	2.116	SD of logged Data	1.014

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.2	95% Adjusted-CLT UCL (Chen-1995)	18.9
		95% Modified-t UCL (Johnson-1978)	20.23

Nonparametric Distribution Free UCLs

95% CLT UCL	18.72	95% Jackknife UCL	20.2
95% Standard Bootstrap UCL	18.16	95% Bootstrap-t UCL	21
95% Hall's Bootstrap UCL	15.49	95% Percentile Bootstrap UCL	18.24
95% BCA Bootstrap UCL	18.41		
90% Chebyshev(Mean, Sd) UCL	24.14	95% Chebyshev(Mean, Sd) UCL	29.58
97.5% Chebyshev(Mean, Sd) UCL	37.12	99% Chebyshev(Mean, Sd) UCL	51.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	10.77
Maximum	21	Median	10.9
SD	8.471	Std. Error of Mean	3.458
Coefficient of Variation	0.787	Skewness	0.0784
Mean of logged Data	1.999	SD of logged Data	1.033

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.73	95% Adjusted-CLT UCL (Chen-1995)	16.57
		95% Modified-t UCL (Johnson-1978)	17.75

Nonparametric Distribution Free UCLs

95% CLT UCL	16.45	95% Jackknife UCL	17.73
95% Standard Bootstrap UCL	15.92	95% Bootstrap-t UCL	18.53
95% Hall's Bootstrap UCL	13.93	95% Percentile Bootstrap UCL	15.83
95% BCA Bootstrap UCL	15.8		
90% Chebyshev(Mean, Sd) UCL	21.14	95% Chebyshev(Mean, Sd) UCL	25.84
97.5% Chebyshev(Mean, Sd) UCL	32.36	99% Chebyshev(Mean, Sd) UCL	45.18

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	17.7
Maximum	34.3	Median	17.53
SD	15.03	Std. Error of Mean	6.135
Coefficient of Variation	0.849	Skewness	0.0272
Mean of logged Data	2.386	SD of logged Data	1.204

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.07	95% Adjusted-CLT UCL (Chen-1995)	27.87
		95% Modified-t UCL (Johnson-1978)	30.08

Nonparametric Distribution Free UCLs

95% CLT UCL	27.79	95% Jackknife UCL	30.07
95% Standard Bootstrap UCL	26.99	95% Bootstrap-t UCL	30.9
95% Hall's Bootstrap UCL	22.95	95% Percentile Bootstrap UCL	26.7
95% BCA Bootstrap UCL	26.66		
90% Chebyshev(Mean, Sd) UCL	36.11	95% Chebyshev(Mean, Sd) UCL	44.44
97.5% Chebyshev(Mean, Sd) UCL	56.02	99% Chebyshev(Mean, Sd) UCL	78.74

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	3.455
Maximum	4.555	Median	3.253
SD	0.54	Std. Error of Mean	0.22
Coefficient of Variation	0.156	Skewness	2.426
Mean of logged Data	1.231	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.899	95% Adjusted-CLT UCL (Chen-1995)	4.051
		95% Modified-t UCL (Johnson-1978)	3.936

Nonparametric Distribution Free UCLs

95% CLT UCL	3.818	95% Jackknife UCL	3.899
95% Standard Bootstrap UCL	3.783	95% Bootstrap-t UCL	7.86
95% Hall's Bootstrap UCL	7.467	95% Percentile Bootstrap UCL	3.889
95% BCA Bootstrap UCL	4.105		
90% Chebyshev(Mean, Sd) UCL	4.116	95% Chebyshev(Mean, Sd) UCL	4.416
97.5% Chebyshev(Mean, Sd) UCL	4.832	99% Chebyshev(Mean, Sd) UCL	5.649

Suggested UCL to Use

95% Student's-t UCL	3.899	or 95% Modified-t UCL	3.936

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.77	Mean	24.93
Maximum	48.9	Median	25.2
SD	20.07	Std. Error of Mean	8.192
Coefficient of Variation	0.805	Skewness	0.0638
Mean of logged Data	2.807	SD of logged Data	1.085

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.44	95% Adjusted-CLT UCL (Chen-1995)	38.63
		95% Modified-t UCL (Johnson-1978)	41.48

Nonparametric Distribution Free UCLs

95% CLT UCL	38.41	95% Jackknife UCL	41.44
95% Standard Bootstrap UCL	37.48	95% Bootstrap-t UCL	42.42
95% Hall's Bootstrap UCL	32.5	95% Percentile Bootstrap UCL	37.4
95% BCA Bootstrap UCL	37.15		
90% Chebyshev(Mean, Sd) UCL	49.51	95% Chebyshev(Mean, Sd) UCL	60.64
97.5% Chebyshev(Mean, Sd) UCL	76.09	99% Chebyshev(Mean, Sd) UCL	106.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.215	Mean	1.282
Maximum	1.31	Median	1.293
SD	0.0352	Std. Error of Mean	0.0144
Coefficient of Variation	0.0274	Skewness	-1.759
Mean of logged Data	0.248	SD of logged Data	0.0279

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.311	95% Adjusted-CLT UCL (Chen-1995)	1.294
		95% Modified-t UCL (Johnson-1978)	1.309

Nonparametric Distribution Free UCLs

95% CLT UCL	1.305	95% Jackknife UCL	1.311
95% Standard Bootstrap UCL	1.303	95% Bootstrap-t UCL	1.302
95% Hall's Bootstrap UCL	1.297	95% Percentile Bootstrap UCL	1.301
95% BCA Bootstrap UCL	1.297		
90% Chebyshev(Mean, Sd) UCL	1.325	95% Chebyshev(Mean, Sd) UCL	1.344
97.5% Chebyshev(Mean, Sd) UCL	1.371	99% Chebyshev(Mean, Sd) UCL	1.425

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	13.9
Maximum	28	Median	13.1
SD	11.1	Std. Error of Mean	4.532
Coefficient of Variation	0.799	Skewness	0.177
Mean of logged Data	2.267	SD of logged Data	0.995

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.03	95% Adjusted-CLT UCL (Chen-1995)	21.7
		95% Modified-t UCL (Johnson-1978)	23.09

Nonparametric Distribution Free UCLs

95% CLT UCL	21.36	95% Jackknife UCL	23.03
95% Standard Bootstrap UCL	20.8	95% Bootstrap-t UCL	24.42
95% Hall's Bootstrap UCL	18.04	95% Percentile Bootstrap UCL	20.93
95% BCA Bootstrap UCL	20.93		
90% Chebyshev(Mean, Sd) UCL	27.5	95% Chebyshev(Mean, Sd) UCL	33.66
97.5% Chebyshev(Mean, Sd) UCL	42.2	99% Chebyshev(Mean, Sd) UCL	58.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.955	Mean	1.437
Maximum	1.99	Median	1.383
SD	0.512	Std. Error of Mean	0.209
Coefficient of Variation	0.357	Skewness	0.0688
Mean of logged Data	0.307	SD of logged Data	0.368

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.858	95% Adjusted-CLT UCL (Chen-1995)	1.787
		95% Modified-t UCL (Johnson-1978)	1.859

Nonparametric Distribution Free UCLs

95% CLT UCL	1.781	95% Jackknife UCL	1.858
95% Standard Bootstrap UCL	1.751	95% Bootstrap-t UCL	1.945
95% Hall's Bootstrap UCL	1.613	95% Percentile Bootstrap UCL	1.757
95% BCA Bootstrap UCL	1.753		
90% Chebyshev(Mean, Sd) UCL	2.064	95% Chebyshev(Mean, Sd) UCL	2.348
97.5% Chebyshev(Mean, Sd) UCL	2.743	99% Chebyshev(Mean, Sd) UCL	3.517

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	10.27
Maximum	19	Median	9.735
SD	7.384	Std. Error of Mean	3.015
Coefficient of Variation	0.719	Skewness	0.106
Mean of logged Data	2.052	SD of logged Data	0.856

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.35	95% Adjusted-CLT UCL (Chen-1995)	15.37
		95% Modified-t UCL (Johnson-1978)	16.37

Nonparametric Distribution Free UCLs

95% CLT UCL	15.23	95% Jackknife UCL	16.35
95% Standard Bootstrap UCL	14.82	95% Bootstrap-t UCL	17.36
95% Hall's Bootstrap UCL	12.95	95% Percentile Bootstrap UCL	14.86
95% BCA Bootstrap UCL	14.83		
90% Chebyshev(Mean, Sd) UCL	19.32	95% Chebyshev(Mean, Sd) UCL	23.41
97.5% Chebyshev(Mean, Sd) UCL	29.1	99% Chebyshev(Mean, Sd) UCL	40.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	4.76	Mean	24.75
Maximum	49.4	Median	24.35
SD	19.81	Std. Error of Mean	8.088
Coefficient of Variation	0.801	Skewness	0.121
Mean of logged Data	2.817	SD of logged Data	1.052

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.04	95% Adjusted-CLT UCL (Chen-1995)	38.48
		95% Modified-t UCL (Johnson-1978)	41.11

Nonparametric Distribution Free UCLs

95% CLT UCL	38.05	95% Jackknife UCL	41.04
95% Standard Bootstrap UCL	36.81	95% Bootstrap-t UCL	43.86
95% Hall's Bootstrap UCL	32.41	95% Percentile Bootstrap UCL	37.15
95% BCA Bootstrap UCL	37.53		
90% Chebyshev(Mean, Sd) UCL	49.01	95% Chebyshev(Mean, Sd) UCL	60
97.5% Chebyshev(Mean, Sd) UCL	75.26	99% Chebyshev(Mean, Sd) UCL	105.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:56:58 AM
From File	21078L.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.2	Mean	11.08
Maximum	12.2	Median	10.9
SD	0.688	Std. Error of Mean	0.281
Coefficient of Variation	0.0621	Skewness	0.671
Mean of logged Data	2.404	SD of logged Data	0.0614

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.65	95% Adjusted-CLT UCL (Chen-1995)	11.63
		95% Modified-t UCL (Johnson-1978)	11.66

Nonparametric Distribution Free UCLs

95% CLT UCL	11.55	95% Jackknife UCL	11.65
95% Standard Bootstrap UCL	11.51	95% Bootstrap-t UCL	11.96
95% Hall's Bootstrap UCL	15.57	95% Percentile Bootstrap UCL	11.52
95% BCA Bootstrap UCL	11.53		
90% Chebyshev(Mean, Sd) UCL	11.93	95% Chebyshev(Mean, Sd) UCL	12.31
97.5% Chebyshev(Mean, Sd) UCL	12.84	99% Chebyshev(Mean, Sd) UCL	13.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.7	Mean	18.87
Maximum	23.4	Median	18.6
SD	4.188	Std. Error of Mean	1.71
Coefficient of Variation	0.222	Skewness	0.0635
Mean of logged Data	2.917	SD of logged Data	0.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.31	95% Adjusted-CLT UCL (Chen-1995)	21.73
		95% Modified-t UCL (Johnson-1978)	22.32

Nonparametric Distribution Free UCLs

95% CLT UCL	21.68	95% Jackknife UCL	22.31
95% Standard Bootstrap UCL	21.41	95% Bootstrap-t UCL	22.08
95% Hall's Bootstrap UCL	20.41	95% Percentile Bootstrap UCL	21.47
95% BCA Bootstrap UCL	21.5		
90% Chebyshev(Mean, Sd) UCL	24	95% Chebyshev(Mean, Sd) UCL	26.32
97.5% Chebyshev(Mean, Sd) UCL	29.54	99% Chebyshev(Mean, Sd) UCL	35.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.1	Mean	41.3
Maximum	43.5	Median	41.3
SD	1.601	Std. Error of Mean	0.654
Coefficient of Variation	0.0388	Skewness	1.004E-14
Mean of logged Data	3.72	SD of logged Data	0.0388

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.62	95% Adjusted-CLT UCL (Chen-1995)	42.38
		95% Modified-t UCL (Johnson-1978)	42.62

Nonparametric Distribution Free UCLs

95% CLT UCL	42.38	95% Jackknife UCL	42.62
95% Standard Bootstrap UCL	42.33	95% Bootstrap-t UCL	42.63
95% Hall's Bootstrap UCL	42.31	95% Percentile Bootstrap UCL	42.25
95% BCA Bootstrap UCL	42.22		
90% Chebyshev(Mean, Sd) UCL	43.26	95% Chebyshev(Mean, Sd) UCL	44.15
97.5% Chebyshev(Mean, Sd) UCL	45.38	99% Chebyshev(Mean, Sd) UCL	47.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.581	Mean	0.855
Maximum	0.995	Median	0.888
SD	0.154	Std. Error of Mean	0.0628
Coefficient of Variation	0.18	Skewness	-1.291
Mean of logged Data	-0.172	SD of logged Data	0.2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.982	95% Adjusted-CLT UCL (Chen-1995)	0.923
		95% Modified-t UCL (Johnson-1978)	0.976

Nonparametric Distribution Free UCLs

95% CLT UCL	0.958	95% Jackknife UCL	0.982
95% Standard Bootstrap UCL	0.951	95% Bootstrap-t UCL	0.948
95% Hall's Bootstrap UCL	0.927	95% Percentile Bootstrap UCL	0.944
95% BCA Bootstrap UCL	0.93		
90% Chebyshev(Mean, Sd) UCL	1.043	95% Chebyshev(Mean, Sd) UCL	1.129
97.5% Chebyshev(Mean, Sd) UCL	1.247	99% Chebyshev(Mean, Sd) UCL	1.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.305	Mean	0.439
Maximum	0.53	Median	0.471
SD	0.105	Std. Error of Mean	0.0429
Coefficient of Variation	0.239	Skewness	-0.437
Mean of logged Data	-0.85	SD of logged Data	0.254

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.525	95% Adjusted-CLT UCL (Chen-1995)	0.501
		95% Modified-t UCL (Johnson-1978)	0.524

Nonparametric Distribution Free UCLs

95% CLT UCL	0.509	95% Jackknife UCL	0.525
95% Standard Bootstrap UCL	0.501	95% Bootstrap-t UCL	0.52
95% Hall's Bootstrap UCL	0.484	95% Percentile Bootstrap UCL	0.495
95% BCA Bootstrap UCL	0.495		
90% Chebyshev(Mean, Sd) UCL	0.567	95% Chebyshev(Mean, Sd) UCL	0.626
97.5% Chebyshev(Mean, Sd) UCL	0.707	99% Chebyshev(Mean, Sd) UCL	0.866

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	2.079
Maximum	2.16	Median	2.09
SD	0.0801	Std. Error of Mean	0.0327
Coefficient of Variation	0.0385	Skewness	-0.273
Mean of logged Data	0.731	SD of logged Data	0.0387

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.145	95% Adjusted-CLT UCL (Chen-1995)	2.129
		95% Modified-t UCL (Johnson-1978)	2.144

Nonparametric Distribution Free UCLs

95% CLT UCL	2.133	95% Jackknife UCL	2.145
95% Standard Bootstrap UCL	2.129	95% Bootstrap-t UCL	2.137
95% Hall's Bootstrap UCL	2.114	95% Percentile Bootstrap UCL	2.124
95% BCA Bootstrap UCL	2.128		
90% Chebyshev(Mean, Sd) UCL	2.177	95% Chebyshev(Mean, Sd) UCL	2.222
97.5% Chebyshev(Mean, Sd) UCL	2.283	99% Chebyshev(Mean, Sd) UCL	2.404

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.13	Mean	19.31
Maximum	75.2	Median	10.46
SD	27.7	Std. Error of Mean	11.31
Coefficient of Variation	1.435	Skewness	2.326
Mean of logged Data	2.324	SD of logged Data	1.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.09	95% Adjusted-CLT UCL (Chen-1995)	49.37
		95% Modified-t UCL (Johnson-1978)	43.88

Nonparametric Distribution Free UCLs

95% CLT UCL	37.9	95% Jackknife UCL	42.09
95% Standard Bootstrap UCL	36.34	95% Bootstrap-t UCL	120
95% Hall's Bootstrap UCL	146	95% Percentile Bootstrap UCL	41.26
95% BCA Bootstrap UCL	43.57		
90% Chebyshev(Mean, Sd) UCL	53.23	95% Chebyshev(Mean, Sd) UCL	68.59
97.5% Chebyshev(Mean, Sd) UCL	89.92	99% Chebyshev(Mean, Sd) UCL	131.8

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.82	Mean	19.65
Maximum	70.2	Median	11.97
SD	25.24	Std. Error of Mean	10.3
Coefficient of Variation	1.284	Skewness	2.245
Mean of logged Data	2.456	SD of logged Data	1.058

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.42	95% Adjusted-CLT UCL (Chen-1995)	46.7
		95% Modified-t UCL (Johnson-1978)	41.99

Nonparametric Distribution Free UCLs

95% CLT UCL	36.6	95% Jackknife UCL	40.42
95% Standard Bootstrap UCL	34.36	95% Bootstrap-t UCL	91.23
95% Hall's Bootstrap UCL	115.5	95% Percentile Bootstrap UCL	38.05
95% BCA Bootstrap UCL	40.83		
90% Chebyshev(Mean, Sd) UCL	50.57	95% Chebyshev(Mean, Sd) UCL	64.57
97.5% Chebyshev(Mean, Sd) UCL	84.01	99% Chebyshev(Mean, Sd) UCL	122.2

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.22	Mean	25.92
Maximum	85.1	Median	17.15
SD	29.98	Std. Error of Mean	12.24
Coefficient of Variation	1.157	Skewness	2.103
Mean of logged Data	2.797	SD of logged Data	1.019

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.58	95% Adjusted-CLT UCL (Chen-1995)	57.28
		95% Modified-t UCL (Johnson-1978)	52.33

Nonparametric Distribution Free UCLs

95% CLT UCL	46.05	95% Jackknife UCL	50.58
95% Standard Bootstrap UCL	44.35	95% Bootstrap-t UCL	92.07
95% Hall's Bootstrap UCL	130.7	95% Percentile Bootstrap UCL	48.39
95% BCA Bootstrap UCL	51.8		
90% Chebyshev(Mean, Sd) UCL	62.64	95% Chebyshev(Mean, Sd) UCL	79.27
97.5% Chebyshev(Mean, Sd) UCL	102.4	99% Chebyshev(Mean, Sd) UCL	147.7

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.51	Mean	7.003
Maximum	10.8	Median	7.63
SD	3.643	Std. Error of Mean	1.487
Coefficient of Variation	0.52	Skewness	-0.316
Mean of logged Data	1.798	SD of logged Data	0.638

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10	95% Adjusted-CLT UCL (Chen-1995)	9.245
		95% Modified-t UCL (Johnson-1978)	9.968

Nonparametric Distribution Free UCLs

95% CLT UCL	9.45	95% Jackknife UCL	10
95% Standard Bootstrap UCL	9.236	95% Bootstrap-t UCL	9.792
95% Hall's Bootstrap UCL	8.629	95% Percentile Bootstrap UCL	9.217
95% BCA Bootstrap UCL	9.12		
90% Chebyshev(Mean, Sd) UCL	11.47	95% Chebyshev(Mean, Sd) UCL	13.49
97.5% Chebyshev(Mean, Sd) UCL	16.29	99% Chebyshev(Mean, Sd) UCL	21.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.26	Mean	5.775
Maximum	9.44	Median	6.075
SD	2.924	Std. Error of Mean	1.194
Coefficient of Variation	0.506	Skewness	-0.137
Mean of logged Data	1.619	SD of logged Data	0.601

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.18	95% Adjusted-CLT UCL (Chen-1995)	7.667
		95% Modified-t UCL (Johnson-1978)	8.169

Nonparametric Distribution Free UCLs

95% CLT UCL	7.738	95% Jackknife UCL	8.18
95% Standard Bootstrap UCL	7.565	95% Bootstrap-t UCL	8.051
95% Hall's Bootstrap UCL	7.538	95% Percentile Bootstrap UCL	7.593
95% BCA Bootstrap UCL	7.632		
90% Chebyshev(Mean, Sd) UCL	9.356	95% Chebyshev(Mean, Sd) UCL	10.98
97.5% Chebyshev(Mean, Sd) UCL	13.23	99% Chebyshev(Mean, Sd) UCL	17.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.15	Mean	21.64
Maximum	75.5	Median	13.55
SD	27.01	Std. Error of Mean	11.03
Coefficient of Variation	1.248	Skewness	2.203
Mean of logged Data	2.566	SD of logged Data	1.058

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.86	95% Adjusted-CLT UCL (Chen-1995)	50.37
		95% Modified-t UCL (Johnson-1978)	45.51

Nonparametric Distribution Free UCLs

95% CLT UCL	39.78	95% Jackknife UCL	43.86
95% Standard Bootstrap UCL	38.21	95% Bootstrap-t UCL	91.25
95% Hall's Bootstrap UCL	120.7	95% Percentile Bootstrap UCL	42.08
95% BCA Bootstrap UCL	44.97		
90% Chebyshev(Mean, Sd) UCL	54.72	95% Chebyshev(Mean, Sd) UCL	69.7
97.5% Chebyshev(Mean, Sd) UCL	90.49	99% Chebyshev(Mean, Sd) UCL	131.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.76	Mean	12.05
Maximum	56.6	Median	3.258
SD	21.83	Std. Error of Mean	8.911
Coefficient of Variation	1.812	Skewness	2.449
Mean of logged Data	1.623	SD of logged Data	1.184

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30	95% Adjusted-CLT UCL (Chen-1995)	36.22
		95% Modified-t UCL (Johnson-1978)	31.49

Nonparametric Distribution Free UCLs

95% CLT UCL	26.7	95% Jackknife UCL	30
95% Standard Bootstrap UCL	25.34	95% Bootstrap-t UCL	2033
95% Hall's Bootstrap UCL	1031	95% Percentile Bootstrap UCL	29.85
95% BCA Bootstrap UCL	29.93		
90% Chebyshev(Mean, Sd) UCL	38.78	95% Chebyshev(Mean, Sd) UCL	50.89
97.5% Chebyshev(Mean, Sd) UCL	67.7	99% Chebyshev(Mean, Sd) UCL	100.7

Suggested UCL to Use

95% Hall's Bootstrap UCL 1031

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.95	Mean	27.67
Maximum	92.3	Median	18.85
SD	32.52	Std. Error of Mean	13.28
Coefficient of Variation	1.175	Skewness	2.165

Mean of logged Data	2.859	SD of logged Data	1.017

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.42	95% Adjusted-CLT UCL (Chen-1995)	62.04
		95% Modified-t UCL (Johnson-1978)	56.37

Nonparametric Distribution Free UCLs

95% CLT UCL	49.5	95% Jackknife UCL	54.42
95% Standard Bootstrap UCL	47.57	95% Bootstrap-t UCL	101.3
95% Hall's Bootstrap UCL	158.9	95% Percentile Bootstrap UCL	52.13
95% BCA Bootstrap UCL	56.78		
90% Chebyshev(Mean, Sd) UCL	67.49	95% Chebyshev(Mean, Sd) UCL	85.53
97.5% Chebyshev(Mean, Sd) UCL	110.6	99% Chebyshev(Mean, Sd) UCL	159.8

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.235	Mean	9.027
Maximum	47.7	Median	1.318
SD	18.95	Std. Error of Mean	7.735
Coefficient of Variation	2.099	Skewness	2.449
Mean of logged Data	0.857	SD of logged Data	1.474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.61	95% Adjusted-CLT UCL (Chen-1995)	30.01
		95% Modified-t UCL (Johnson-1978)	25.9

Nonparametric Distribution Free UCLs

95% CLT UCL	21.75	95% Jackknife UCL	24.61
95% Standard Bootstrap UCL	20.52	95% Bootstrap-t UCL	5181
95% Hall's Bootstrap UCL	3959	95% Percentile Bootstrap UCL	24.49
95% BCA Bootstrap UCL	24.51		
90% Chebyshev(Mean, Sd) UCL	32.23	95% Chebyshev(Mean, Sd) UCL	42.74
97.5% Chebyshev(Mean, Sd) UCL	57.33	99% Chebyshev(Mean, Sd) UCL	85.99

Suggested UCL to Use

95% Hall's Bootstrap UCL 3959

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.9	Mean	7.993
Maximum	12.4	Median	8.63
SD	4.217	Std. Error of Mean	1.721
Coefficient of Variation	0.528	Skewness	-0.272
Mean of logged Data	1.927	SD of logged Data	0.642

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.46	95% Adjusted-CLT UCL (Chen-1995)	10.62
		95% Modified-t UCL (Johnson-1978)	11.43

Nonparametric Distribution Free UCLs

95% CLT UCL	10.82	95% Jackknife UCL	11.46
95% Standard Bootstrap UCL	10.55	95% Bootstrap-t UCL	11.16
95% Hall's Bootstrap UCL	9.897	95% Percentile Bootstrap UCL	10.52
95% BCA Bootstrap UCL	10.52		
90% Chebyshev(Mean, Sd) UCL	13.16	95% Chebyshev(Mean, Sd) UCL	15.5
97.5% Chebyshev(Mean, Sd) UCL	18.74	99% Chebyshev(Mean, Sd) UCL	25.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.05	Mean	1.408

Maximum	1.85	Median	1.255
SD	0.343	Std. Error of Mean	0.14
Coefficient of Variation	0.243	Skewness	0.745
Mean of logged Data	0.319	SD of logged Data	0.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.69	95% Adjusted-CLT UCL (Chen-1995)	1.684
		95% Modified-t UCL (Johnson-1978)	1.697

Nonparametric Distribution Free UCLs

95% CLT UCL	1.639	95% Jackknife UCL	1.69
95% Standard Bootstrap UCL	1.621	95% Bootstrap-t UCL	2.265
95% Hall's Bootstrap UCL	4.829	95% Percentile Bootstrap UCL	1.632
95% BCA Bootstrap UCL	1.638		
90% Chebyshev(Mean, Sd) UCL	1.828	95% Chebyshev(Mean, Sd) UCL	2.018
97.5% Chebyshev(Mean, Sd) UCL	2.282	99% Chebyshev(Mean, Sd) UCL	2.801

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.74	Mean	17.59
Maximum	71.5	Median	9.05
SD	26.62	Std. Error of Mean	10.87
Coefficient of Variation	1.514	Skewness	2.362
Mean of logged Data	2.177	SD of logged Data	1.187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.49	95% Adjusted-CLT UCL (Chen-1995)	46.66
		95% Modified-t UCL (Johnson-1978)	41.23

Nonparametric Distribution Free UCLs

95% CLT UCL	35.46	95% Jackknife UCL	39.49
95% Standard Bootstrap UCL	34.41	95% Bootstrap-t UCL	117.8
95% Hall's Bootstrap UCL	160.4	95% Percentile Bootstrap UCL	38.43
95% BCA Bootstrap UCL	40.85		

90% Chebyshev(Mean, Sd) UCL	50.19	95% Chebyshev(Mean, Sd) UCL	64.96
97.5% Chebyshev(Mean, Sd) UCL	85.46	99% Chebyshev(Mean, Sd) UCL	125.7

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.47	Mean	14.55
Maximum	22.5	Median	17.2
SD	7.274	Std. Error of Mean	2.969
Coefficient of Variation	0.5	Skewness	-0.582
Mean of logged Data	2.533	SD of logged Data	0.638

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.54	95% Adjusted-CLT UCL (Chen-1995)	18.68
		95% Modified-t UCL (Johnson-1978)	20.42

Nonparametric Distribution Free UCLs

95% CLT UCL	19.44	95% Jackknife UCL	20.54
95% Standard Bootstrap UCL	18.93	95% Bootstrap-t UCL	19.36
95% Hall's Bootstrap UCL	17.79	95% Percentile Bootstrap UCL	18.98
95% BCA Bootstrap UCL	18.53		
90% Chebyshev(Mean, Sd) UCL	23.46	95% Chebyshev(Mean, Sd) UCL	27.5
97.5% Chebyshev(Mean, Sd) UCL	33.1	99% Chebyshev(Mean, Sd) UCL	44.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:58:23 AM
From File	21078M.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	15.8	Mean	18.12
Maximum	19.8	Median	18.45
SD	1.721	Std. Error of Mean	0.703
Coefficient of Variation	0.095	Skewness	-0.428
Mean of logged Data	2.893	SD of logged Data	0.0967

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.53	95% Adjusted-CLT UCL (Chen-1995)	19.14
		95% Modified-t UCL (Johnson-1978)	19.51

Nonparametric Distribution Free UCLs

95% CLT UCL	19.27	95% Jackknife UCL	19.53
95% Standard Bootstrap UCL	19.17	95% Bootstrap-t UCL	19.4
95% Hall's Bootstrap UCL	18.92	95% Percentile Bootstrap UCL	19.13
95% BCA Bootstrap UCL	19.03		
90% Chebyshev(Mean, Sd) UCL	20.22	95% Chebyshev(Mean, Sd) UCL	21.18
97.5% Chebyshev(Mean, Sd) UCL	22.5	99% Chebyshev(Mean, Sd) UCL	25.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	56.6	Mean	77.98
Maximum	100	Median	76.05
SD	19.48	Std. Error of Mean	7.954
Coefficient of Variation	0.25	Skewness	0.174

Mean of logged Data	4.33	SD of logged Data	0.253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	94.01	95% Adjusted-CLT UCL (Chen-1995)	91.67
		95% Modified-t UCL (Johnson-1978)	94.11

Nonparametric Distribution Free UCLs

95% CLT UCL	91.07	95% Jackknife UCL	94.01
95% Standard Bootstrap UCL	90.12	95% Bootstrap-t UCL	93.37
95% Hall's Bootstrap UCL	90.83	95% Percentile Bootstrap UCL	90.02
95% BCA Bootstrap UCL	90.02		
90% Chebyshev(Mean, Sd) UCL	101.8	95% Chebyshev(Mean, Sd) UCL	112.7
97.5% Chebyshev(Mean, Sd) UCL	127.7	99% Chebyshev(Mean, Sd) UCL	157.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	58.9	Mean	63.48
Maximum	67.5	Median	64.15
SD	3.809	Std. Error of Mean	1.555
Coefficient of Variation	0.06	Skewness	-0.372
Mean of logged Data	4.149	SD of logged Data	0.0605

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	66.62	95% Adjusted-CLT UCL (Chen-1995)	65.79
		95% Modified-t UCL (Johnson-1978)	66.58

Nonparametric Distribution Free UCLs

95% CLT UCL	66.04	95% Jackknife UCL	66.62
95% Standard Bootstrap UCL	65.82	95% Bootstrap-t UCL	66.26
95% Hall's Bootstrap UCL	65.61	95% Percentile Bootstrap UCL	65.63
95% BCA Bootstrap UCL	65.55		
90% Chebyshev(Mean, Sd) UCL	68.15	95% Chebyshev(Mean, Sd) UCL	70.26
97.5% Chebyshev(Mean, Sd) UCL	73.19	99% Chebyshev(Mean, Sd) UCL	78.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.656	Mean	1.007
Maximum	1.61	Median	0.953
SD	0.343	Std. Error of Mean	0.14
Coefficient of Variation	0.341	Skewness	1.166
Mean of logged Data	-0.0376	SD of logged Data	0.322

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.289	95% Adjusted-CLT UCL (Chen-1995)	1.309
		95% Modified-t UCL (Johnson-1978)	1.3

Nonparametric Distribution Free UCLs

95% CLT UCL	1.237	95% Jackknife UCL	1.289
95% Standard Bootstrap UCL	1.218	95% Bootstrap-t UCL	1.419
95% Hall's Bootstrap UCL	2.584	95% Percentile Bootstrap UCL	1.234
95% BCA Bootstrap UCL	1.271		
90% Chebyshev(Mean, Sd) UCL	1.427	95% Chebyshev(Mean, Sd) UCL	1.617
97.5% Chebyshev(Mean, Sd) UCL	1.881	99% Chebyshev(Mean, Sd) UCL	2.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.341	Mean	10.73
Maximum	56.4	Median	0.692
SD	22.48	Std. Error of Mean	9.177
Coefficient of Variation	2.095	Skewness	2.401
Mean of logged Data	0.478	SD of logged Data	2.039

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.22	95% Adjusted-CLT UCL (Chen-1995)	35.43
		95% Modified-t UCL (Johnson-1978)	30.72

Nonparametric Distribution Free UCLs

95% CLT UCL	25.82	95% Jackknife UCL	29.22
95% Standard Bootstrap UCL	24.45	95% Bootstrap-t UCL	973.8
95% Hall's Bootstrap UCL	467.4	95% Percentile Bootstrap UCL	28.43
95% BCA Bootstrap UCL	29.47		
90% Chebyshev(Mean, Sd) UCL	38.26	95% Chebyshev(Mean, Sd) UCL	50.73
97.5% Chebyshev(Mean, Sd) UCL	68.04	99% Chebyshev(Mean, Sd) UCL	102

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.67	Mean	4.292
Maximum	15.5	Median	2.135
SD	5.495	Std. Error of Mean	2.243
Coefficient of Variation	1.28	Skewness	2.441
Mean of logged Data	1.05	SD of logged Data	0.835

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.812	95% Adjusted-CLT UCL (Chen-1995)	10.37
		95% Modified-t UCL (Johnson-1978)	9.185

Nonparametric Distribution Free UCLs

95% CLT UCL	7.982	95% Jackknife UCL	8.812
95% Standard Bootstrap UCL	7.669	95% Bootstrap-t UCL	107.5
95% Hall's Bootstrap UCL	68.82	95% Percentile Bootstrap UCL	8.715
95% BCA Bootstrap UCL	8.822		
90% Chebyshev(Mean, Sd) UCL	11.02	95% Chebyshev(Mean, Sd) UCL	14.07
97.5% Chebyshev(Mean, Sd) UCL	18.3	99% Chebyshev(Mean, Sd) UCL	26.61

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.615	Mean	33.56
Maximum	122	Median	11.33
SD	46.34	Std. Error of Mean	18.92
Coefficient of Variation	1.381	Skewness	1.866
Mean of logged Data	2.708	SD of logged Data	1.386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.68	95% Adjusted-CLT UCL (Chen-1995)	80.08
		95% Modified-t UCL (Johnson-1978)	74.08

Nonparametric Distribution Free UCLs

95% CLT UCL	64.68	95% Jackknife UCL	71.68
95% Standard Bootstrap UCL	61.42	95% Bootstrap-t UCL	266.9
95% Hall's Bootstrap UCL	278.8	95% Percentile Bootstrap UCL	65.55
95% BCA Bootstrap UCL	77.55		
90% Chebyshev(Mean, Sd) UCL	90.32	95% Chebyshev(Mean, Sd) UCL	116
97.5% Chebyshev(Mean, Sd) UCL	151.7	99% Chebyshev(Mean, Sd) UCL	221.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.615	Mean	18.03
Maximum	50	Median	12.58
SD	17.78	Std. Error of Mean	7.257
Coefficient of Variation	0.986	Skewness	1.386
Mean of logged Data	2.466	SD of logged Data	1.025

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.65	95% Adjusted-CLT UCL (Chen-1995)	34.35
		95% Modified-t UCL (Johnson-1978)	33.34

Nonparametric Distribution Free UCLs

95% CLT UCL	29.97	95% Jackknife UCL	32.65
95% Standard Bootstrap UCL	28.9	95% Bootstrap-t UCL	41.61
95% Hall's Bootstrap UCL	43.52	95% Percentile Bootstrap UCL	29.95
95% BCA Bootstrap UCL	31.23		
90% Chebyshev(Mean, Sd) UCL	39.8	95% Chebyshev(Mean, Sd) UCL	49.66
97.5% Chebyshev(Mean, Sd) UCL	63.35	99% Chebyshev(Mean, Sd) UCL	90.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.615	Mean	24.13
Maximum	68	Median	17.83
SD	25.07	Std. Error of Mean	10.23
Coefficient of Variation	1.039	Skewness	1.21
Mean of logged Data	2.636	SD of logged Data	1.199

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.75	95% Adjusted-CLT UCL (Chen-1995)	46.36
		95% Modified-t UCL (Johnson-1978)	45.59

Nonparametric Distribution Free UCLs

95% CLT UCL	40.96	95% Jackknife UCL	44.75
95% Standard Bootstrap UCL	39.44	95% Bootstrap-t UCL	59.66
95% Hall's Bootstrap UCL	46.16	95% Percentile Bootstrap UCL	40.7
95% BCA Bootstrap UCL	45.2		
90% Chebyshev(Mean, Sd) UCL	54.83	95% Chebyshev(Mean, Sd) UCL	68.74
97.5% Chebyshev(Mean, Sd) UCL	88.04	99% Chebyshev(Mean, Sd) UCL	126

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.075	Mean	12.62
Maximum	34	Median	8.903
SD	12.25	Std. Error of Mean	5.003
Coefficient of Variation	0.971	Skewness	1.206
Mean of logged Data	2.095	SD of logged Data	1.055

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.7	95% Adjusted-CLT UCL (Chen-1995)	23.48
		95% Modified-t UCL (Johnson-1978)	23.12

Nonparametric Distribution Free UCLs

95% CLT UCL	20.85	95% Jackknife UCL	22.7
95% Standard Bootstrap UCL	20.16	95% Bootstrap-t UCL	27.3
95% Hall's Bootstrap UCL	24.59	95% Percentile Bootstrap UCL	20.68
95% BCA Bootstrap UCL	21.04		
90% Chebyshev(Mean, Sd) UCL	27.63	95% Chebyshev(Mean, Sd) UCL	34.43
97.5% Chebyshev(Mean, Sd) UCL	43.87	99% Chebyshev(Mean, Sd) UCL	62.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2	Mean	22.98
Maximum	89.8	Median	6.225
SD	34.66	Std. Error of Mean	14.15
Coefficient of Variation	1.508	Skewness	1.942
Mean of logged Data	2.082	SD of logged Data	1.625

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	51.49	95% Adjusted-CLT UCL (Chen-1995)	58.24
		95% Modified-t UCL (Johnson-1978)	53.36

Nonparametric Distribution Free UCLs

95% CLT UCL	46.25	95% Jackknife UCL	51.49
95% Standard Bootstrap UCL	44.68	95% Bootstrap-t UCL	224.5
95% Hall's Bootstrap UCL	261	95% Percentile Bootstrap UCL	47.31
95% BCA Bootstrap UCL	55.76		
90% Chebyshev(Mean, Sd) UCL	65.43	95% Chebyshev(Mean, Sd) UCL	84.66
97.5% Chebyshev(Mean, Sd) UCL	111.4	99% Chebyshev(Mean, Sd) UCL	163.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.615	Mean	18.86
Maximum	51.2	Median	14.13
SD	18.36	Std. Error of Mean	7.495
Coefficient of Variation	0.973	Skewness	1.249
Mean of logged Data	2.498	SD of logged Data	1.052

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.96	95% Adjusted-CLT UCL (Chen-1995)	35.27
		95% Modified-t UCL (Johnson-1978)	34.6

Nonparametric Distribution Free UCLs

95% CLT UCL	31.19	95% Jackknife UCL	33.96
95% Standard Bootstrap UCL	30.09	95% Bootstrap-t UCL	45.47
95% Hall's Bootstrap UCL	35.87	95% Percentile Bootstrap UCL	31.17
95% BCA Bootstrap UCL	34.19		
90% Chebyshev(Mean, Sd) UCL	41.35	95% Chebyshev(Mean, Sd) UCL	51.53
97.5% Chebyshev(Mean, Sd) UCL	65.67	99% Chebyshev(Mean, Sd) UCL	93.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.075	Mean	12.74
Maximum	58.9	Median	3.285
SD	22.62	Std. Error of Mean	9.236
Coefficient of Variation	1.776	Skewness	2.445
Mean of logged Data	1.713	SD of logged Data	1.168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.35	95% Adjusted-CLT UCL (Chen-1995)	37.78
		95% Modified-t UCL (Johnson-1978)	32.89

Nonparametric Distribution Free UCLs

95% CLT UCL	27.93	95% Jackknife UCL	31.35
95% Standard Bootstrap UCL	26.59	95% Bootstrap-t UCL	2276
95% Hall's Bootstrap UCL	1039	95% Percentile Bootstrap UCL	31
95% BCA Bootstrap UCL	40.32		
90% Chebyshev(Mean, Sd) UCL	40.45	95% Chebyshev(Mean, Sd) UCL	53
97.5% Chebyshev(Mean, Sd) UCL	70.42	99% Chebyshev(Mean, Sd) UCL	104.6

Suggested UCL to Use

95% Hall's Bootstrap UCL 1039

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.06	Mean	46.32
Maximum	111	Median	22.17
SD	49.35	Std. Error of Mean	20.15
Coefficient of Variation	1.066	Skewness	0.794
Mean of logged Data	3.22	SD of logged Data	1.268

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	86.91	95% Adjusted-CLT UCL (Chen-1995)	86.43
		95% Modified-t UCL (Johnson-1978)	88

Nonparametric Distribution Free UCLs

95% CLT UCL	79.46	95% Jackknife UCL	86.91
95% Standard Bootstrap UCL	76.62	95% Bootstrap-t UCL	193
95% Hall's Bootstrap UCL	349	95% Percentile Bootstrap UCL	78.89
95% BCA Bootstrap UCL	81.31		
90% Chebyshev(Mean, Sd) UCL	106.8	95% Chebyshev(Mean, Sd) UCL	134.1
97.5% Chebyshev(Mean, Sd) UCL	172.1	99% Chebyshev(Mean, Sd) UCL	246.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.23	Mean	11.08
Maximum	57.3	Median	1.315
SD	22.67	Std. Error of Mean	9.255
Coefficient of Variation	2.046	Skewness	2.436
Mean of logged Data	1.073	SD of logged Data	1.529

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.73	95% Adjusted-CLT UCL (Chen-1995)	36.14
		95% Modified-t UCL (Johnson-1978)	31.26

Nonparametric Distribution Free UCLs

95% CLT UCL	26.3	95% Jackknife UCL	29.73
95% Standard Bootstrap UCL	24.82	95% Bootstrap-t UCL	5786
95% Hall's Bootstrap UCL	2408	95% Percentile Bootstrap UCL	29.29
95% BCA Bootstrap UCL	30.22		
90% Chebyshev(Mean, Sd) UCL	38.85	95% Chebyshev(Mean, Sd) UCL	51.42
97.5% Chebyshev(Mean, Sd) UCL	68.88	99% Chebyshev(Mean, Sd) UCL	103.2

Suggested UCL to Use

95% Hall's Bootstrap UCL 2408

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.075	Mean	14.02
Maximum	39.1	Median	9.503
SD	14.24	Std. Error of Mean	5.815
Coefficient of Variation	1.016	Skewness	1.263
Mean of logged Data	2.15	SD of logged Data	1.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.74	95% Adjusted-CLT UCL (Chen-1995)	26.79
		95% Modified-t UCL (Johnson-1978)	26.24

Nonparametric Distribution Free UCLs

95% CLT UCL	23.59	95% Jackknife UCL	25.74
95% Standard Bootstrap UCL	22.82	95% Bootstrap-t UCL	31.1
95% Hall's Bootstrap UCL	31.46	95% Percentile Bootstrap UCL	23.23
95% BCA Bootstrap UCL	26		
90% Chebyshev(Mean, Sd) UCL	31.47	95% Chebyshev(Mean, Sd) UCL	39.37
97.5% Chebyshev(Mean, Sd) UCL	50.34	99% Chebyshev(Mean, Sd) UCL	71.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.976	Mean	10.45
Maximum	52.4	Median	1.82
SD	20.59	Std. Error of Mean	8.407
Coefficient of Variation	1.97	Skewness	2.427
Mean of logged Data	1.113	SD of logged Data	1.507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.39	95% Adjusted-CLT UCL (Chen-1995)	33.18
		95% Modified-t UCL (Johnson-1978)	28.78

Nonparametric Distribution Free UCLs

95% CLT UCL	24.28	95% Jackknife UCL	27.39
95% Standard Bootstrap UCL	23.4	95% Bootstrap-t UCL	333.4
95% Hall's Bootstrap UCL	163	95% Percentile Bootstrap UCL	26.76
95% BCA Bootstrap UCL	35.3		
90% Chebyshev(Mean, Sd) UCL	35.67	95% Chebyshev(Mean, Sd) UCL	47.1
97.5% Chebyshev(Mean, Sd) UCL	62.95	99% Chebyshev(Mean, Sd) UCL	94.1

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.68	Mean	32.47
Maximum	83.2	Median	11.48
SD	38.79	Std. Error of Mean	15.84
Coefficient of Variation	1.195	Skewness	0.89
Mean of logged Data	2.665	SD of logged Data	1.468

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	64.38	95% Adjusted-CLT UCL (Chen-1995)	64.67
		95% Modified-t UCL (Johnson-1978)	65.34

Nonparametric Distribution Free UCLs

95% CLT UCL	58.52	95% Jackknife UCL	64.38
95% Standard Bootstrap UCL	56.23	95% Bootstrap-t UCL	161.2
95% Hall's Bootstrap UCL	399.7	95% Percentile Bootstrap UCL	57.96
95% BCA Bootstrap UCL	58.42		
90% Chebyshev(Mean, Sd) UCL	79.98	95% Chebyshev(Mean, Sd) UCL	101.5
97.5% Chebyshev(Mean, Sd) UCL	131.4	99% Chebyshev(Mean, Sd) UCL	190.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.63	Mean	28.26
Maximum	84.8	Median	18.38
SD	29.9	Std. Error of Mean	12.21
Coefficient of Variation	1.058	Skewness	1.742
Mean of logged Data	2.909	SD of logged Data	1.006

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.86	95% Adjusted-CLT UCL (Chen-1995)	57.61
		95% Modified-t UCL (Johnson-1978)	54.3

Nonparametric Distribution Free UCLs

95% CLT UCL	48.34	95% Jackknife UCL	52.86
95% Standard Bootstrap UCL	46.31	95% Bootstrap-t UCL	76.26
95% Hall's Bootstrap UCL	118.5	95% Percentile Bootstrap UCL	49.38
95% BCA Bootstrap UCL	53.9		
90% Chebyshev(Mean, Sd) UCL	64.88	95% Chebyshev(Mean, Sd) UCL	81.47
97.5% Chebyshev(Mean, Sd) UCL	104.5	99% Chebyshev(Mean, Sd) UCL	149.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:59:39 AM
From File	21078N.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11	Mean	12.43
Maximum	13.8	Median	12.5
SD	1.395	Std. Error of Mean	0.57
Coefficient of Variation	0.112	Skewness	-0.0271
Mean of logged Data	2.515	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.58	95% Adjusted-CLT UCL (Chen-1995)	13.36
		95% Modified-t UCL (Johnson-1978)	13.58

Nonparametric Distribution Free UCLs

95% CLT UCL	13.37	95% Jackknife UCL	13.58
95% Standard Bootstrap UCL	13.29	95% Bootstrap-t UCL	13.59
95% Hall's Bootstrap UCL	12.91	95% Percentile Bootstrap UCL	13.28
95% BCA Bootstrap UCL	13.32		
90% Chebyshev(Mean, Sd) UCL	14.14	95% Chebyshev(Mean, Sd) UCL	14.92
97.5% Chebyshev(Mean, Sd) UCL	15.99	99% Chebyshev(Mean, Sd) UCL	18.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.5	Mean	60.15
Maximum	153	Median	24.35
SD	63.05	Std. Error of Mean	25.74
Coefficient of Variation	1.048	Skewness	0.996

Mean of logged Data	3.61	SD of logged Data	1.068

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	112	95% Adjusted-CLT UCL (Chen-1995)	113.7
		95% Modified-t UCL (Johnson-1978)	113.8

Nonparametric Distribution Free UCLs

95% CLT UCL	102.5	95% Jackknife UCL	112
95% Standard Bootstrap UCL	99.05	95% Bootstrap-t UCL	357.8
95% Hall's Bootstrap UCL	662.6	95% Percentile Bootstrap UCL	101.6
95% BCA Bootstrap UCL	103.4		
90% Chebyshev(Mean, Sd) UCL	137.4	95% Chebyshev(Mean, Sd) UCL	172.3
97.5% Chebyshev(Mean, Sd) UCL	220.9	99% Chebyshev(Mean, Sd) UCL	316.2

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.4	Mean	43.7
Maximum	46.6	Median	43.6
SD	2.725	Std. Error of Mean	1.112
Coefficient of Variation	0.0624	Skewness	-0.0264
Mean of logged Data	3.776	SD of logged Data	0.0625

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.94	95% Adjusted-CLT UCL (Chen-1995)	45.52
		95% Modified-t UCL (Johnson-1978)	45.94

Nonparametric Distribution Free UCLs

95% CLT UCL	45.53	95% Jackknife UCL	45.94
95% Standard Bootstrap UCL	45.34	95% Bootstrap-t UCL	45.9
95% Hall's Bootstrap UCL	44.85	95% Percentile Bootstrap UCL	45.43
95% BCA Bootstrap UCL	45.33		
90% Chebyshev(Mean, Sd) UCL	47.04	95% Chebyshev(Mean, Sd) UCL	48.55
97.5% Chebyshev(Mean, Sd) UCL	50.65	99% Chebyshev(Mean, Sd) UCL	54.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.597	Mean	0.844
Maximum	1.13	Median	0.83
SD	0.212	Std. Error of Mean	0.0864
Coefficient of Variation	0.251	Skewness	0.189
Mean of logged Data	-0.196	SD of logged Data	0.254

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.018	95% Adjusted-CLT UCL (Chen-1995)	0.993
		95% Modified-t UCL (Johnson-1978)	1.019

Nonparametric Distribution Free UCLs

95% CLT UCL	0.986	95% Jackknife UCL	1.018
95% Standard Bootstrap UCL	0.974	95% Bootstrap-t UCL	1.043
95% Hall's Bootstrap UCL	0.943	95% Percentile Bootstrap UCL	0.98
95% BCA Bootstrap UCL	0.984		
90% Chebyshev(Mean, Sd) UCL	1.103	95% Chebyshev(Mean, Sd) UCL	1.221
97.5% Chebyshev(Mean, Sd) UCL	1.384	99% Chebyshev(Mean, Sd) UCL	1.704

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.343	Mean	0.486
Maximum	0.665	Median	0.474
SD	0.106	Std. Error of Mean	0.0431
Coefficient of Variation	0.218	Skewness	0.72
Mean of logged Data	-0.742	SD of logged Data	0.215

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.572	95% Adjusted-CLT UCL (Chen-1995)	0.57
		95% Modified-t UCL (Johnson-1978)	0.574

Nonparametric Distribution Free UCLs

95% CLT UCL	0.556	95% Jackknife UCL	0.572
95% Standard Bootstrap UCL	0.55	95% Bootstrap-t UCL	0.589
95% Hall's Bootstrap UCL	0.672	95% Percentile Bootstrap UCL	0.551
95% BCA Bootstrap UCL	0.561		
90% Chebyshev(Mean, Sd) UCL	0.615	95% Chebyshev(Mean, Sd) UCL	0.673
97.5% Chebyshev(Mean, Sd) UCL	0.755	99% Chebyshev(Mean, Sd) UCL	0.914

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.9	Mean	2.031
Maximum	2.095	Median	2.068
SD	0.0783	Std. Error of Mean	0.032
Coefficient of Variation	0.0386	Skewness	-1.206
Mean of logged Data	0.708	SD of logged Data	0.0392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.095	95% Adjusted-CLT UCL (Chen-1995)	2.067
		95% Modified-t UCL (Johnson-1978)	2.093

Nonparametric Distribution Free UCLs

95% CLT UCL	2.083	95% Jackknife UCL	2.095
95% Standard Bootstrap UCL	2.078	95% Bootstrap-t UCL	2.078
95% Hall's Bootstrap UCL	2.064	95% Percentile Bootstrap UCL	2.078
95% BCA Bootstrap UCL	2.067		
90% Chebyshev(Mean, Sd) UCL	2.127	95% Chebyshev(Mean, Sd) UCL	2.17
97.5% Chebyshev(Mean, Sd) UCL	2.231	99% Chebyshev(Mean, Sd) UCL	2.349

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.97	Mean	7.535
Maximum	14.6	Median	7.05
SD	5.424	Std. Error of Mean	2.214
Coefficient of Variation	0.72	Skewness	0.205
Mean of logged Data	1.744	SD of logged Data	0.856

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12	95% Adjusted-CLT UCL (Chen-1995)	11.38
		95% Modified-t UCL (Johnson-1978)	12.03

Nonparametric Distribution Free UCLs

95% CLT UCL	11.18	95% Jackknife UCL	12
95% Standard Bootstrap UCL	10.98	95% Bootstrap-t UCL	12.66
95% Hall's Bootstrap UCL	9.74	95% Percentile Bootstrap UCL	11.07
95% BCA Bootstrap UCL	10.95		
90% Chebyshev(Mean, Sd) UCL	14.18	95% Chebyshev(Mean, Sd) UCL	17.19
97.5% Chebyshev(Mean, Sd) UCL	21.36	99% Chebyshev(Mean, Sd) UCL	29.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.87	Mean	8.9
Maximum	15.4	Median	8.89
SD	6.276	Std. Error of Mean	2.562
Coefficient of Variation	0.705	Skewness	-0.0311
Mean of logged Data	1.898	SD of logged Data	0.897

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.06	95% Adjusted-CLT UCL (Chen-1995)	13.08
		95% Modified-t UCL (Johnson-1978)	14.06

Nonparametric Distribution Free UCLs

95% CLT UCL	13.11	95% Jackknife UCL	14.06
95% Standard Bootstrap UCL	12.8	95% Bootstrap-t UCL	14.14
95% Hall's Bootstrap UCL	11.15	95% Percentile Bootstrap UCL	12.81
95% BCA Bootstrap UCL	12.7		
90% Chebyshev(Mean, Sd) UCL	16.59	95% Chebyshev(Mean, Sd) UCL	20.07
97.5% Chebyshev(Mean, Sd) UCL	24.9	99% Chebyshev(Mean, Sd) UCL	34.39

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.49	Mean	12.28
Maximum	22.3	Median	12.07
SD	8.723	Std. Error of Mean	3.561
Coefficient of Variation	0.71	Skewness	0.0199
Mean of logged Data	2.216	SD of logged Data	0.905

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.46	95% Adjusted-CLT UCL (Chen-1995)	18.17
		95% Modified-t UCL (Johnson-1978)	19.46

Nonparametric Distribution Free UCLs

95% CLT UCL	18.14	95% Jackknife UCL	19.46
95% Standard Bootstrap UCL	17.62	95% Bootstrap-t UCL	19.93
95% Hall's Bootstrap UCL	15.58	95% Percentile Bootstrap UCL	17.49
95% BCA Bootstrap UCL	17.89		
90% Chebyshev(Mean, Sd) UCL	22.96	95% Chebyshev(Mean, Sd) UCL	27.8
97.5% Chebyshev(Mean, Sd) UCL	34.52	99% Chebyshev(Mean, Sd) UCL	47.71

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.56	Mean	6.355
Maximum	10.3	Median	6.045
SD	3.898	Std. Error of Mean	1.591
Coefficient of Variation	0.613	Skewness	0.0466
Mean of logged Data	1.662	SD of logged Data	0.691

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.562	95% Adjusted-CLT UCL (Chen-1995)	9.005
		95% Modified-t UCL (Johnson-1978)	9.567

Nonparametric Distribution Free UCLs

95% CLT UCL	8.973	95% Jackknife UCL	9.562
95% Standard Bootstrap UCL	8.677	95% Bootstrap-t UCL	10.13
95% Hall's Bootstrap UCL	7.702	95% Percentile Bootstrap UCL	8.857
95% BCA Bootstrap UCL	8.675		
90% Chebyshev(Mean, Sd) UCL	11.13	95% Chebyshev(Mean, Sd) UCL	13.29
97.5% Chebyshev(Mean, Sd) UCL	16.29	99% Chebyshev(Mean, Sd) UCL	22.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.97	Mean	5.56
Maximum	9.75	Median	5.265
SD	3.766	Std. Error of Mean	1.537
Coefficient of Variation	0.677	Skewness	0.0654
Mean of logged Data	1.478	SD of logged Data	0.785

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.658	95% Adjusted-CLT UCL (Chen-1995)	8.133
		95% Modified-t UCL (Johnson-1978)	8.665

Nonparametric Distribution Free UCLs

95% CLT UCL	8.089	95% Jackknife UCL	8.658
95% Standard Bootstrap UCL	7.9	95% Bootstrap-t UCL	8.691
95% Hall's Bootstrap UCL	6.856	95% Percentile Bootstrap UCL	7.937
95% BCA Bootstrap UCL	7.827		
90% Chebyshev(Mean, Sd) UCL	10.17	95% Chebyshev(Mean, Sd) UCL	12.26
97.5% Chebyshev(Mean, Sd) UCL	15.16	99% Chebyshev(Mean, Sd) UCL	20.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	9.757
Maximum	17.8	Median	9.665
SD	7.124	Std. Error of Mean	2.908
Coefficient of Variation	0.73	Skewness	0.017
Mean of logged Data	1.966	SD of logged Data	0.935

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.62	95% Adjusted-CLT UCL (Chen-1995)	14.56
		95% Modified-t UCL (Johnson-1978)	15.62

Nonparametric Distribution Free UCLs

95% CLT UCL	14.54	95% Jackknife UCL	15.62
95% Standard Bootstrap UCL	13.98	95% Bootstrap-t UCL	16.06
95% Hall's Bootstrap UCL	12.4	95% Percentile Bootstrap UCL	14.3
95% BCA Bootstrap UCL	13.99		
90% Chebyshev(Mean, Sd) UCL	18.48	95% Chebyshev(Mean, Sd) UCL	22.43
97.5% Chebyshev(Mean, Sd) UCL	27.92	99% Chebyshev(Mean, Sd) UCL	38.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.66	Mean	3.081
Maximum	3.22	Median	3.185
SD	0.217	Std. Error of Mean	0.0888
Coefficient of Variation	0.0706	Skewness	-1.977
Mean of logged Data	1.123	SD of logged Data	0.0742

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.26	95% Adjusted-CLT UCL (Chen-1995)	3.15
		95% Modified-t UCL (Johnson-1978)	3.248

Nonparametric Distribution Free UCLs

95% CLT UCL	3.227	95% Jackknife UCL	3.26
95% Standard Bootstrap UCL	3.213	95% Bootstrap-t UCL	3.196
95% Hall's Bootstrap UCL	3.167	95% Percentile Bootstrap UCL	3.198
95% BCA Bootstrap UCL	3.174		
90% Chebyshev(Mean, Sd) UCL	3.347	95% Chebyshev(Mean, Sd) UCL	3.468
97.5% Chebyshev(Mean, Sd) UCL	3.635	99% Chebyshev(Mean, Sd) UCL	3.964

Suggested UCL to Use

95% Student's-t UCL	3.26	or 95% Modified-t UCL	3.248

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.57	Mean	13.79
Maximum	28.6	Median	12.29
SD	10.59	Std. Error of Mean	4.323
Coefficient of Variation	0.768	Skewness	0.341
Mean of logged Data	2.294	SD of logged Data	0.957

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.5	95% Adjusted-CLT UCL (Chen-1995)	21.54
		95% Modified-t UCL (Johnson-1978)	22.6

Nonparametric Distribution Free UCLs

95% CLT UCL	20.9	95% Jackknife UCL	22.5
95% Standard Bootstrap UCL	20.34	95% Bootstrap-t UCL	24.37
95% Hall's Bootstrap UCL	18.75	95% Percentile Bootstrap UCL	20.41
95% BCA Bootstrap UCL	20.8		
90% Chebyshev(Mean, Sd) UCL	26.75	95% Chebyshev(Mean, Sd) UCL	32.63
97.5% Chebyshev(Mean, Sd) UCL	40.78	99% Chebyshev(Mean, Sd) UCL	56.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.21	Mean	1.271
Maximum	1.29	Median	1.283
SD	0.0307	Std. Error of Mean	0.0125
Coefficient of Variation	0.0242	Skewness	-2.145
Mean of logged Data	0.239	SD of logged Data	0.0246

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.296	95% Adjusted-CLT UCL (Chen-1995)	1.28
		95% Modified-t UCL (Johnson-1978)	1.294

Nonparametric Distribution Free UCLs

95% CLT UCL	1.291	95% Jackknife UCL	1.296
95% Standard Bootstrap UCL	1.29	95% Bootstrap-t UCL	1.287
95% Hall's Bootstrap UCL	1.283	95% Percentile Bootstrap UCL	1.287
95% BCA Bootstrap UCL	1.283		
90% Chebyshev(Mean, Sd) UCL	1.308	95% Chebyshev(Mean, Sd) UCL	1.326
97.5% Chebyshev(Mean, Sd) UCL	1.349	99% Chebyshev(Mean, Sd) UCL	1.396

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.92	Mean	7.092
Maximum	11.8	Median	6.75
SD	4.423	Std. Error of Mean	1.806
Coefficient of Variation	0.624	Skewness	0.0514
Mean of logged Data	1.765	SD of logged Data	0.704

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.73	95% Adjusted-CLT UCL (Chen-1995)	10.1
		95% Modified-t UCL (Johnson-1978)	10.74

Nonparametric Distribution Free UCLs

95% CLT UCL	10.06	95% Jackknife UCL	10.73
95% Standard Bootstrap UCL	9.799	95% Bootstrap-t UCL	10.61
95% Hall's Bootstrap UCL	8.607	95% Percentile Bootstrap UCL	9.85
95% BCA Bootstrap UCL	9.767		
90% Chebyshev(Mean, Sd) UCL	12.51	95% Chebyshev(Mean, Sd) UCL	14.96
97.5% Chebyshev(Mean, Sd) UCL	18.37	99% Chebyshev(Mean, Sd) UCL	25.06

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.43	Mean	1.955
Maximum	2.46	Median	2.07
SD	0.417	Std. Error of Mean	0.17
Coefficient of Variation	0.213	Skewness	-0.439
Mean of logged Data	0.65	SD of logged Data	0.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.298	95% Adjusted-CLT UCL (Chen-1995)	2.202
		95% Modified-t UCL (Johnson-1978)	2.293

Nonparametric Distribution Free UCLs

95% CLT UCL	2.235	95% Jackknife UCL	2.298
95% Standard Bootstrap UCL	2.21	95% Bootstrap-t UCL	2.258
95% Hall's Bootstrap UCL	2.16	95% Percentile Bootstrap UCL	2.198
95% BCA Bootstrap UCL	2.188		
90% Chebyshev(Mean, Sd) UCL	2.466	95% Chebyshev(Mean, Sd) UCL	2.697
97.5% Chebyshev(Mean, Sd) UCL	3.018	99% Chebyshev(Mean, Sd) UCL	3.648

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.39	Mean	6.7
Maximum	17.4	Median	4.73
SD	5.707	Std. Error of Mean	2.33
Coefficient of Variation	0.852	Skewness	1.683
Mean of logged Data	1.641	SD of logged Data	0.766

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.4	95% Adjusted-CLT UCL (Chen-1995)	12.24
		95% Modified-t UCL (Johnson-1978)	11.66

Nonparametric Distribution Free UCLs

95% CLT UCL	10.53	95% Jackknife UCL	11.4
95% Standard Bootstrap UCL	10.17	95% Bootstrap-t UCL	14.84
95% Hall's Bootstrap UCL	23.69	95% Percentile Bootstrap UCL	10.65
95% BCA Bootstrap UCL	11.87		
90% Chebyshev(Mean, Sd) UCL	13.69	95% Chebyshev(Mean, Sd) UCL	16.86
97.5% Chebyshev(Mean, Sd) UCL	21.25	99% Chebyshev(Mean, Sd) UCL	29.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.49	Mean	13.04
Maximum	25.6	Median	12.09
SD	9.807	Std. Error of Mean	4.004
Coefficient of Variation	0.752	Skewness	0.171
Mean of logged Data	2.243	SD of logged Data	0.952

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.1	95% Adjusted-CLT UCL (Chen-1995)	19.92
		95% Modified-t UCL (Johnson-1978)	21.15

Nonparametric Distribution Free UCLs

95% CLT UCL	19.62	95% Jackknife UCL	21.1
95% Standard Bootstrap UCL	19.14	95% Bootstrap-t UCL	22.86
95% Hall's Bootstrap UCL	17.04	95% Percentile Bootstrap UCL	19
95% BCA Bootstrap UCL	19.44		
90% Chebyshev(Mean, Sd) UCL	25.05	95% Chebyshev(Mean, Sd) UCL	30.49
97.5% Chebyshev(Mean, Sd) UCL	38.04	99% Chebyshev(Mean, Sd) UCL	52.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:20:17 PM
From File	38002A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.92	Mean	9.55
Maximum	11	Median	9.385
SD	1.123	Std. Error of Mean	0.458
Coefficient of Variation	0.118	Skewness	-0.0714
Mean of logged Data	2.251	SD of logged Data	0.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.47	95% Adjusted-CLT UCL (Chen-1995)	10.29
		95% Modified-t UCL (Johnson-1978)	10.47

Nonparametric Distribution Free UCLs

95% CLT UCL	10.3	95% Jackknife UCL	10.47
95% Standard Bootstrap UCL	10.24	95% Bootstrap-t UCL	10.68
95% Hall's Bootstrap UCL	10.78	95% Percentile Bootstrap UCL	10.26
95% BCA Bootstrap UCL	10.2		
90% Chebyshev(Mean, Sd) UCL	10.92	95% Chebyshev(Mean, Sd) UCL	11.55
97.5% Chebyshev(Mean, Sd) UCL	12.41	99% Chebyshev(Mean, Sd) UCL	14.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10	Mean	15.33
Maximum	38.5	Median	10.45
SD	11.39	Std. Error of Mean	4.648
Coefficient of Variation	0.743	Skewness	2.415

Mean of logged Data	2.581	SD of logged Data	0.53

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.7	95% Adjusted-CLT UCL (Chen-1995)	27.88
		95% Modified-t UCL (Johnson-1978)	25.46

Nonparametric Distribution Free UCLs

95% CLT UCL	22.98	95% Jackknife UCL	24.7
95% Standard Bootstrap UCL	22.27	95% Bootstrap-t UCL	282.6
95% Hall's Bootstrap UCL	161.3	95% Percentile Bootstrap UCL	24.37
95% BCA Bootstrap UCL	25.15		
90% Chebyshev(Mean, Sd) UCL	29.28	95% Chebyshev(Mean, Sd) UCL	35.6
97.5% Chebyshev(Mean, Sd) UCL	44.36	99% Chebyshev(Mean, Sd) UCL	61.59

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	35.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	32.9	Mean	37.72
Maximum	44.3	Median	36.9
SD	3.991	Std. Error of Mean	1.629
Coefficient of Variation	0.106	Skewness	0.795
Mean of logged Data	3.626	SD of logged Data	0.104

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41	95% Adjusted-CLT UCL (Chen-1995)	40.96
		95% Modified-t UCL (Johnson-1978)	41.09

Nonparametric Distribution Free UCLs

95% CLT UCL	40.4	95% Jackknife UCL	41
95% Standard Bootstrap UCL	40.08	95% Bootstrap-t UCL	42.97
95% Hall's Bootstrap UCL	57.53	95% Percentile Bootstrap UCL	40.25
95% BCA Bootstrap UCL	40.65		
90% Chebyshev(Mean, Sd) UCL	42.6	95% Chebyshev(Mean, Sd) UCL	44.82
97.5% Chebyshev(Mean, Sd) UCL	47.89	99% Chebyshev(Mean, Sd) UCL	53.93

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.808	Mean	0.914
Maximum	0.985	Median	0.948
SD	0.0818	Std. Error of Mean	0.0334
Coefficient of Variation	0.0895	Skewness	-0.717
Mean of logged Data	-0.0934	SD of logged Data	0.0918

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.981	95% Adjusted-CLT UCL (Chen-1995)	0.959
		95% Modified-t UCL (Johnson-1978)	0.98

Nonparametric Distribution Free UCLs

95% CLT UCL	0.969	95% Jackknife UCL	0.981
95% Standard Bootstrap UCL	0.963	95% Bootstrap-t UCL	0.973
95% Hall's Bootstrap UCL	0.949	95% Percentile Bootstrap UCL	0.962
95% BCA Bootstrap UCL	0.953		
90% Chebyshev(Mean, Sd) UCL	1.014	95% Chebyshev(Mean, Sd) UCL	1.06
97.5% Chebyshev(Mean, Sd) UCL	1.123	99% Chebyshev(Mean, Sd) UCL	1.246

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.492	Mean	0.51
Maximum	0.525	Median	0.515
SD	0.0142	Std. Error of Mean	0.00579
Coefficient of Variation	0.0278	Skewness	-0.665
Mean of logged Data	-0.674	SD of logged Data	0.028

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.522	95% Adjusted-CLT UCL (Chen-1995)	0.518
		95% Modified-t UCL (Johnson-1978)	0.521

Nonparametric Distribution Free UCLs

95% CLT UCL	0.519	95% Jackknife UCL	0.522
95% Standard Bootstrap UCL	0.518	95% Bootstrap-t UCL	0.52
95% Hall's Bootstrap UCL	0.516	95% Percentile Bootstrap UCL	0.518
95% BCA Bootstrap UCL	0.518		
90% Chebyshev(Mean, Sd) UCL	0.527	95% Chebyshev(Mean, Sd) UCL	0.535
97.5% Chebyshev(Mean, Sd) UCL	0.546	99% Chebyshev(Mean, Sd) UCL	0.568

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	2	Mean	2.076
Maximum	2.14	Median	2.1
SD	0.0605	Std. Error of Mean	0.0247
Coefficient of Variation	0.0292	Skewness	-0.703
Mean of logged Data	0.73	SD of logged Data	0.0294

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.126	95% Adjusted-CLT UCL (Chen-1995)	2.109
		95% Modified-t UCL (Johnson-1978)	2.124

Nonparametric Distribution Free UCLs

95% CLT UCL	2.116	95% Jackknife UCL	2.126
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.15	95% Chebyshev(Mean, Sd) UCL	2.184

97.5% Chebyshev(Mean, Sd) UCL	2.23	99% Chebyshev(Mean, Sd) UCL	2.322

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2	Mean	2.237
Maximum	2.53	Median	2.14
SD	0.225	Std. Error of Mean	0.092
Coefficient of Variation	0.101	Skewness	0.734
Mean of logged Data	0.801	SD of logged Data	0.0988

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.422	95% Adjusted-CLT UCL (Chen-1995)	2.418
		95% Modified-t UCL (Johnson-1978)	2.427

Nonparametric Distribution Free UCLs

95% CLT UCL	2.388	95% Jackknife UCL	2.422
95% Standard Bootstrap UCL	2.379	95% Bootstrap-t UCL	2.784
95% Hall's Bootstrap UCL	4.256	95% Percentile Bootstrap UCL	2.387
95% BCA Bootstrap UCL	2.39		
90% Chebyshev(Mean, Sd) UCL	2.513	95% Chebyshev(Mean, Sd) UCL	2.638
97.5% Chebyshev(Mean, Sd) UCL	2.811	99% Chebyshev(Mean, Sd) UCL	3.152

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2	Mean	2.948
Maximum	4.01	Median	2.925
SD	0.958	Std. Error of Mean	0.391

Coefficient of Variation	0.325	Skewness	0.0425
Mean of logged Data	1.035	SD of logged Data	0.334

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.737	95% Adjusted-CLT UCL (Chen-1995)	3.599
		95% Modified-t UCL (Johnson-1978)	3.738

Nonparametric Distribution Free UCLs

95% CLT UCL	3.592	95% Jackknife UCL	3.737
95% Standard Bootstrap UCL	3.534	95% Bootstrap-t UCL	3.794
95% Hall's Bootstrap UCL	3.275	95% Percentile Bootstrap UCL	3.545
95% BCA Bootstrap UCL	3.548		
90% Chebyshev(Mean, Sd) UCL	4.122	95% Chebyshev(Mean, Sd) UCL	4.653
97.5% Chebyshev(Mean, Sd) UCL	5.391	99% Chebyshev(Mean, Sd) UCL	6.841

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.075	Mean	4.268
Maximum	6.08	Median	4.12
SD	1.242	Std. Error of Mean	0.507
Coefficient of Variation	0.291	Skewness	0.452
Mean of logged Data	1.416	SD of logged Data	0.289

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.289	95% Adjusted-CLT UCL (Chen-1995)	5.202
		95% Modified-t UCL (Johnson-1978)	5.305

Nonparametric Distribution Free UCLs

95% CLT UCL	5.102	95% Jackknife UCL	5.289
95% Standard Bootstrap UCL	5.013	95% Bootstrap-t UCL	5.579
95% Hall's Bootstrap UCL	4.854	95% Percentile Bootstrap UCL	5.06
95% BCA Bootstrap UCL	5.055		
90% Chebyshev(Mean, Sd) UCL	5.789	95% Chebyshev(Mean, Sd) UCL	6.478
97.5% Chebyshev(Mean, Sd) UCL	7.434	99% Chebyshev(Mean, Sd) UCL	9.312

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.36	Mean	2.889
Maximum	3.29	Median	2.978
SD	0.385	Std. Error of Mean	0.157
Coefficient of Variation	0.133	Skewness	-0.507
Mean of logged Data	1.053	SD of logged Data	0.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.206	95% Adjusted-CLT UCL (Chen-1995)	3.113
		95% Modified-t UCL (Johnson-1978)	3.201

Nonparametric Distribution Free UCLs

95% CLT UCL	3.148	95% Jackknife UCL	3.206
95% Standard Bootstrap UCL	3.121	95% Bootstrap-t UCL	3.156
95% Hall's Bootstrap UCL	3.069	95% Percentile Bootstrap UCL	3.113
95% BCA Bootstrap UCL	3.098		
90% Chebyshev(Mean, Sd) UCL	3.361	95% Chebyshev(Mean, Sd) UCL	3.575
97.5% Chebyshev(Mean, Sd) UCL	3.872	99% Chebyshev(Mean, Sd) UCL	4.455

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.99	Mean	2.102
Maximum	2.29	Median	2.095
SD	0.109	Std. Error of Mean	0.0447
Coefficient of Variation	0.0521	Skewness	0.982

Mean of logged Data	0.742	SD of logged Data	0.0513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.192	95% Adjusted-CLT UCL (Chen-1995)	2.194
		95% Modified-t UCL (Johnson-1978)	2.195

Nonparametric Distribution Free UCLs

95% CLT UCL	2.175	95% Jackknife UCL	2.192
95% Standard Bootstrap UCL	2.171	95% Bootstrap-t UCL	2.218
95% Hall's Bootstrap UCL	2.278	95% Percentile Bootstrap UCL	2.167
95% BCA Bootstrap UCL	2.185		
90% Chebyshev(Mean, Sd) UCL	2.236	95% Chebyshev(Mean, Sd) UCL	2.296
97.5% Chebyshev(Mean, Sd) UCL	2.381	99% Chebyshev(Mean, Sd) UCL	2.546

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2	Mean	2.997
Maximum	4.21	Median	2.88
SD	1.022	Std. Error of Mean	0.417
Coefficient of Variation	0.341	Skewness	0.127
Mean of logged Data	1.047	SD of logged Data	0.349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.838	95% Adjusted-CLT UCL (Chen-1995)	3.706
		95% Modified-t UCL (Johnson-1978)	3.841

Nonparametric Distribution Free UCLs

95% CLT UCL	3.683	95% Jackknife UCL	3.838
95% Standard Bootstrap UCL	3.637	95% Bootstrap-t UCL	3.859
95% Hall's Bootstrap UCL	3.362	95% Percentile Bootstrap UCL	3.665
95% BCA Bootstrap UCL	3.667		
90% Chebyshev(Mean, Sd) UCL	4.249	95% Chebyshev(Mean, Sd) UCL	4.816
97.5% Chebyshev(Mean, Sd) UCL	5.603	99% Chebyshev(Mean, Sd) UCL	7.15

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	3.075	Mean	3.193
Maximum	3.29	Median	3.23
SD	0.0936	Std. Error of Mean	0.0382
Coefficient of Variation	0.0293	Skewness	-0.719
Mean of logged Data	1.16	SD of logged Data	0.0295

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.27	95% Adjusted-CLT UCL (Chen-1995)	3.243
		95% Modified-t UCL (Johnson-1978)	3.268

Nonparametric Distribution Free UCLs

95% CLT UCL	3.255	95% Jackknife UCL	3.27
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.307	95% Chebyshev(Mean, Sd) UCL	3.359
97.5% Chebyshev(Mean, Sd) UCL	3.431	99% Chebyshev(Mean, Sd) UCL	3.573

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2	Mean	3.342
Maximum	4.91	Median	3.22
SD	1.396	Std. Error of Mean	0.57
Coefficient of Variation	0.418	Skewness	0.0734
Mean of logged Data	1.129	SD of logged Data	0.437

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.49	95% Adjusted-CLT UCL (Chen-1995)	4.297
		95% Modified-t UCL (Johnson-1978)	4.493

Nonparametric Distribution Free UCLs

95% CLT UCL	4.279	95% Jackknife UCL	4.49
95% Standard Bootstrap UCL	4.212	95% Bootstrap-t UCL	4.503
95% Hall's Bootstrap UCL	3.826	95% Percentile Bootstrap UCL	4.222
95% BCA Bootstrap UCL	4.193		
90% Chebyshev(Mean, Sd) UCL	5.052	95% Chebyshev(Mean, Sd) UCL	5.826
97.5% Chebyshev(Mean, Sd) UCL	6.901	99% Chebyshev(Mean, Sd) UCL	9.013

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.23	Mean	1.277
Maximum	1.315	Median	1.293
SD	0.0371	Std. Error of Mean	0.0151
Coefficient of Variation	0.0291	Skewness	-0.738
Mean of logged Data	0.244	SD of logged Data	0.0293

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.307	95% Adjusted-CLT UCL (Chen-1995)	1.297
		95% Modified-t UCL (Johnson-1978)	1.306

Nonparametric Distribution Free UCLs

95% CLT UCL	1.302	95% Jackknife UCL	1.307
95% Standard Bootstrap UCL	1.299	95% Bootstrap-t UCL	1.304
95% Hall's Bootstrap UCL	1.293	95% Percentile Bootstrap UCL	1.299
95% BCA Bootstrap UCL	1.297		
90% Chebyshev(Mean, Sd) UCL	1.322	95% Chebyshev(Mean, Sd) UCL	1.343
97.5% Chebyshev(Mean, Sd) UCL	1.371	99% Chebyshev(Mean, Sd) UCL	1.427

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.62	Mean	3.149
Maximum	3.79	Median	3.153
SD	0.397	Std. Error of Mean	0.162
Coefficient of Variation	0.126	Skewness	0.48
Mean of logged Data	1.141	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.476	95% Adjusted-CLT UCL (Chen-1995)	3.45
		95% Modified-t UCL (Johnson-1978)	3.481

Nonparametric Distribution Free UCLs

95% CLT UCL	3.416	95% Jackknife UCL	3.476
95% Standard Bootstrap UCL	3.398	95% Bootstrap-t UCL	3.516
95% Hall's Bootstrap UCL	3.547	95% Percentile Bootstrap UCL	3.401
95% BCA Bootstrap UCL	3.411		
90% Chebyshev(Mean, Sd) UCL	3.636	95% Chebyshev(Mean, Sd) UCL	3.856
97.5% Chebyshev(Mean, Sd) UCL	4.162	99% Chebyshev(Mean, Sd) UCL	4.764

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.97	Mean	1.731
Maximum	2.5	Median	1.91
SD	0.623	Std. Error of Mean	0.254
Coefficient of Variation	0.36	Skewness	-0.412
Mean of logged Data	0.485	SD of logged Data	0.406

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.243	95% Adjusted-CLT UCL (Chen-1995)	2.103
		95% Modified-t UCL (Johnson-1978)	2.236

Nonparametric Distribution Free UCLs

95% CLT UCL	2.149	95% Jackknife UCL	2.243
95% Standard Bootstrap UCL	2.11	95% Bootstrap-t UCL	2.225
95% Hall's Bootstrap UCL	2.038	95% Percentile Bootstrap UCL	2.108
95% BCA Bootstrap UCL	2.09		
90% Chebyshev(Mean, Sd) UCL	2.494	95% Chebyshev(Mean, Sd) UCL	2.839
97.5% Chebyshev(Mean, Sd) UCL	3.319	99% Chebyshev(Mean, Sd) UCL	4.261

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.15	Mean	2.887
Maximum	3.29	Median	3.153
SD	0.513	Std. Error of Mean	0.209
Coefficient of Variation	0.178	Skewness	-0.931
Mean of logged Data	1.046	SD of logged Data	0.191

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.309	95% Adjusted-CLT UCL (Chen-1995)	3.146
		95% Modified-t UCL (Johnson-1978)	3.295

Nonparametric Distribution Free UCLs

95% CLT UCL	3.231	95% Jackknife UCL	3.309
95% Standard Bootstrap UCL	3.199	95% Bootstrap-t UCL	3.231
95% Hall's Bootstrap UCL	3.091	95% Percentile Bootstrap UCL	3.207
95% BCA Bootstrap UCL	3.113		
90% Chebyshev(Mean, Sd) UCL	3.515	95% Chebyshev(Mean, Sd) UCL	3.799
97.5% Chebyshev(Mean, Sd) UCL	4.194	99% Chebyshev(Mean, Sd) UCL	4.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.075	Mean	3.809
Maximum	4.68	Median	3.79
SD	0.688	Std. Error of Mean	0.281
Coefficient of Variation	0.181	Skewness	0.141
Mean of logged Data	1.324	SD of logged Data	0.181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.375	95% Adjusted-CLT UCL (Chen-1995)	4.288
		95% Modified-t UCL (Johnson-1978)	4.378

Nonparametric Distribution Free UCLs

95% CLT UCL	4.271	95% Jackknife UCL	4.375
95% Standard Bootstrap UCL	4.235	95% Bootstrap-t UCL	4.46
95% Hall's Bootstrap UCL	4.074	95% Percentile Bootstrap UCL	4.243
95% BCA Bootstrap UCL	4.218		
90% Chebyshev(Mean, Sd) UCL	4.651	95% Chebyshev(Mean, Sd) UCL	5.033
97.5% Chebyshev(Mean, Sd) UCL	5.562	99% Chebyshev(Mean, Sd) UCL	6.603

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:21:35 PM
From File	38002B.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.1	Mean	13.43
Maximum	15.4	Median	13.4
SD	1.651	Std. Error of Mean	0.674
Coefficient of Variation	0.123	Skewness	-0.156
Mean of logged Data	2.591	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.79	95% Adjusted-CLT UCL (Chen-1995)	14.5
		95% Modified-t UCL (Johnson-1978)	14.78

Nonparametric Distribution Free UCLs

95% CLT UCL	14.54	95% Jackknife UCL	14.79
95% Standard Bootstrap UCL	14.46	95% Bootstrap-t UCL	14.82
95% Hall's Bootstrap UCL	14.86	95% Percentile Bootstrap UCL	14.47
95% BCA Bootstrap UCL	14.37		
90% Chebyshev(Mean, Sd) UCL	15.46	95% Chebyshev(Mean, Sd) UCL	16.37
97.5% Chebyshev(Mean, Sd) UCL	17.64	99% Chebyshev(Mean, Sd) UCL	20.14

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.7	Mean	20.92
Maximum	54.3	Median	14.7
SD	16.41	Std. Error of Mean	6.698
Coefficient of Variation	0.784	Skewness	2.415

Mean of logged Data	2.876	SD of logged Data	0.556

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.41	95% Adjusted-CLT UCL (Chen-1995)	38.99
		95% Modified-t UCL (Johnson-1978)	35.51

Nonparametric Distribution Free UCLs

95% CLT UCL	31.93	95% Jackknife UCL	34.41
95% Standard Bootstrap UCL	30.88	95% Bootstrap-t UCL	139.3
95% Hall's Bootstrap UCL	114.7	95% Percentile Bootstrap UCL	33.83
95% BCA Bootstrap UCL	35		
90% Chebyshev(Mean, Sd) UCL	41.01	95% Chebyshev(Mean, Sd) UCL	50.11
97.5% Chebyshev(Mean, Sd) UCL	62.74	99% Chebyshev(Mean, Sd) UCL	87.56

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	50.11

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.6	Mean	49.15
Maximum	54.1	Median	48.55
SD	3.683	Std. Error of Mean	1.503
Coefficient of Variation	0.0749	Skewness	-0.128
Mean of logged Data	3.893	SD of logged Data	0.0755

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.18	95% Adjusted-CLT UCL (Chen-1995)	51.54
		95% Modified-t UCL (Johnson-1978)	52.17

Nonparametric Distribution Free UCLs

95% CLT UCL	51.62	95% Jackknife UCL	52.18
95% Standard Bootstrap UCL	51.37	95% Bootstrap-t UCL	52.61
95% Hall's Bootstrap UCL	53.83	95% Percentile Bootstrap UCL	51.35
95% BCA Bootstrap UCL	51.25		
90% Chebyshev(Mean, Sd) UCL	53.66	95% Chebyshev(Mean, Sd) UCL	55.7
97.5% Chebyshev(Mean, Sd) UCL	58.54	99% Chebyshev(Mean, Sd) UCL	64.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.97	Mean	1.162
Maximum	1.64	Median	1.018
SD	0.273	Std. Error of Mean	0.111
Coefficient of Variation	0.235	Skewness	1.413
Mean of logged Data	0.129	SD of logged Data	0.216

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.386	95% Adjusted-CLT UCL (Chen-1995)	1.414
		95% Modified-t UCL (Johnson-1978)	1.397

Nonparametric Distribution Free UCLs

95% CLT UCL	1.345	95% Jackknife UCL	1.386
95% Standard Bootstrap UCL	1.329	95% Bootstrap-t UCL	2.356
95% Hall's Bootstrap UCL	3.169	95% Percentile Bootstrap UCL	1.333
95% BCA Bootstrap UCL	1.383		
90% Chebyshev(Mean, Sd) UCL	1.496	95% Chebyshev(Mean, Sd) UCL	1.647
97.5% Chebyshev(Mean, Sd) UCL	1.857	99% Chebyshev(Mean, Sd) UCL	2.27

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.52	Mean	0.665
Maximum	0.939	Median	0.544
SD	0.205	Std. Error of Mean	0.0836
Coefficient of Variation	0.308	Skewness	0.95
Mean of logged Data	-0.445	SD of logged Data	0.288

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.833	95% Adjusted-CLT UCL (Chen-1995)	0.837
		95% Modified-t UCL (Johnson-1978)	0.839

Nonparametric Distribution Free UCLs

95% CLT UCL	0.802	95% Jackknife UCL	0.833
95% Standard Bootstrap UCL	0.787	95% Bootstrap-t UCL	2.032
95% Hall's Bootstrap UCL	2.405	95% Percentile Bootstrap UCL	0.797
95% BCA Bootstrap UCL	0.798		
90% Chebyshev(Mean, Sd) UCL	0.916	95% Chebyshev(Mean, Sd) UCL	1.029
97.5% Chebyshev(Mean, Sd) UCL	1.187	99% Chebyshev(Mean, Sd) UCL	1.497

Suggested UCL to Use

95% Student's-t UCL	0.833	or 95% Modified-t UCL	0.839

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.54	Mean	2.075
Maximum	2.99	Median	2.115
SD	0.53	Std. Error of Mean	0.217
Coefficient of Variation	0.256	Skewness	0.942
Mean of logged Data	0.704	SD of logged Data	0.247

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.511	95% Adjusted-CLT UCL (Chen-1995)	2.52
		95% Modified-t UCL (Johnson-1978)	2.525

Nonparametric Distribution Free UCLs

95% CLT UCL	2.431	95% Jackknife UCL	2.511
95% Standard Bootstrap UCL	2.403	95% Bootstrap-t UCL	2.664
95% Hall's Bootstrap UCL	2.684	95% Percentile Bootstrap UCL	2.452
95% BCA Bootstrap UCL	2.462		
90% Chebyshev(Mean, Sd) UCL	2.725	95% Chebyshev(Mean, Sd) UCL	3.019
97.5% Chebyshev(Mean, Sd) UCL	3.427	99% Chebyshev(Mean, Sd) UCL	4.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.13	Mean	5.505
Maximum	10.8	Median	4.775
SD	3.705	Std. Error of Mean	1.512
Coefficient of Variation	0.673	Skewness	0.456
Mean of logged Data	1.492	SD of logged Data	0.734

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.553	95% Adjusted-CLT UCL (Chen-1995)	8.294
		95% Modified-t UCL (Johnson-1978)	8.599

Nonparametric Distribution Free UCLs

95% CLT UCL	7.993	95% Jackknife UCL	8.553
95% Standard Bootstrap UCL	7.809	95% Bootstrap-t UCL	10.25
95% Hall's Bootstrap UCL	7.175	95% Percentile Bootstrap UCL	8.01
95% BCA Bootstrap UCL	7.748		
90% Chebyshev(Mean, Sd) UCL	10.04	95% Chebyshev(Mean, Sd) UCL	12.1
97.5% Chebyshev(Mean, Sd) UCL	14.95	99% Chebyshev(Mean, Sd) UCL	20.55

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.9	Mean	3.586
Maximum	9.87	Median	2.128
SD	3.127	Std. Error of Mean	1.277
Coefficient of Variation	0.872	Skewness	2.294
Mean of logged Data	1.067	SD of logged Data	0.634

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.158	95% Adjusted-CLT UCL (Chen-1995)	6.963
		95% Modified-t UCL (Johnson-1978)	6.357

Nonparametric Distribution Free UCLs

95% CLT UCL	5.686	95% Jackknife UCL	6.158
95% Standard Bootstrap UCL	5.508	95% Bootstrap-t UCL	53.46
95% Hall's Bootstrap UCL	37.9	95% Percentile Bootstrap UCL	5.957
95% BCA Bootstrap UCL	6.217		
90% Chebyshev(Mean, Sd) UCL	7.415	95% Chebyshev(Mean, Sd) UCL	9.15
97.5% Chebyshev(Mean, Sd) UCL	11.56	99% Chebyshev(Mean, Sd) UCL	16.29

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.15

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.56	Mean	8.397
Maximum	14.9	Median	7.965
SD	5.535	Std. Error of Mean	2.26
Coefficient of Variation	0.659	Skewness	0.112
Mean of logged Data	1.901	SD of logged Data	0.774

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.95	95% Adjusted-CLT UCL (Chen-1995)	12.22
		95% Modified-t UCL (Johnson-1978)	12.97

Nonparametric Distribution Free UCLs

95% CLT UCL	12.11	95% Jackknife UCL	12.95
95% Standard Bootstrap UCL	11.79	95% Bootstrap-t UCL	12.96
95% Hall's Bootstrap UCL	10.63	95% Percentile Bootstrap UCL	11.77
95% BCA Bootstrap UCL	11.97		
90% Chebyshev(Mean, Sd) UCL	15.18	95% Chebyshev(Mean, Sd) UCL	18.25
97.5% Chebyshev(Mean, Sd) UCL	22.51	99% Chebyshev(Mean, Sd) UCL	30.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.31	Mean	4.87
Maximum	7.55	Median	4.83
SD	2.164	Std. Error of Mean	0.883
Coefficient of Variation	0.444	Skewness	0.0476
Mean of logged Data	1.491	SD of logged Data	0.481

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.65	95% Adjusted-CLT UCL (Chen-1995)	6.341
		95% Modified-t UCL (Johnson-1978)	6.653

Nonparametric Distribution Free UCLs

95% CLT UCL	6.323	95% Jackknife UCL	6.65
95% Standard Bootstrap UCL	6.2	95% Bootstrap-t UCL	6.784
95% Hall's Bootstrap UCL	5.801	95% Percentile Bootstrap UCL	6.265
95% BCA Bootstrap UCL	6.258		
90% Chebyshev(Mean, Sd) UCL	7.52	95% Chebyshev(Mean, Sd) UCL	8.721
97.5% Chebyshev(Mean, Sd) UCL	10.39	99% Chebyshev(Mean, Sd) UCL	13.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.1	Mean	3.72
Maximum	5.84	Median	3.325
SD	1.806	Std. Error of Mean	0.737
Coefficient of Variation	0.485	Skewness	0.227
Mean of logged Data	1.209	SD of logged Data	0.507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.205	95% Adjusted-CLT UCL (Chen-1995)	5.005
		95% Modified-t UCL (Johnson-1978)	5.217

Nonparametric Distribution Free UCLs

95% CLT UCL	4.933	95% Jackknife UCL	5.205
95% Standard Bootstrap UCL	4.837	95% Bootstrap-t UCL	5.016
95% Hall's Bootstrap UCL	4.363	95% Percentile Bootstrap UCL	4.915
95% BCA Bootstrap UCL	4.882		
90% Chebyshev(Mean, Sd) UCL	5.931	95% Chebyshev(Mean, Sd) UCL	6.933
97.5% Chebyshev(Mean, Sd) UCL	8.324	99% Chebyshev(Mean, Sd) UCL	11.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.13	Mean	8.458
Maximum	19.3	Median	6.54
SD	7.074	Std. Error of Mean	2.888
Coefficient of Variation	0.836	Skewness	0.726
Mean of logged Data	1.785	SD of logged Data	0.958

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.28	95% Adjusted-CLT UCL (Chen-1995)	14.12
		95% Modified-t UCL (Johnson-1978)	14.42

Nonparametric Distribution Free UCLs

95% CLT UCL	13.21	95% Jackknife UCL	14.28
95% Standard Bootstrap UCL	12.86	95% Bootstrap-t UCL	16.26
95% Hall's Bootstrap UCL	15.2	95% Percentile Bootstrap UCL	13.01
95% BCA Bootstrap UCL	13.31		
90% Chebyshev(Mean, Sd) UCL	17.12	95% Chebyshev(Mean, Sd) UCL	21.05
97.5% Chebyshev(Mean, Sd) UCL	26.49	99% Chebyshev(Mean, Sd) UCL	37.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.155	Mean	3.235
Maximum	3.29	Median	3.243
SD	0.0508	Std. Error of Mean	0.0207
Coefficient of Variation	0.0157	Skewness	-0.673
Mean of logged Data	1.174	SD of logged Data	0.0158

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.277	95% Adjusted-CLT UCL (Chen-1995)	3.263
		95% Modified-t UCL (Johnson-1978)	3.276

Nonparametric Distribution Free UCLs

95% CLT UCL	3.269	95% Jackknife UCL	3.277
95% Standard Bootstrap UCL	3.265	95% Bootstrap-t UCL	3.271
95% Hall's Bootstrap UCL	3.264	95% Percentile Bootstrap UCL	3.265
95% BCA Bootstrap UCL	3.263		
90% Chebyshev(Mean, Sd) UCL	3.297	95% Chebyshev(Mean, Sd) UCL	3.325
97.5% Chebyshev(Mean, Sd) UCL	3.364	99% Chebyshev(Mean, Sd) UCL	3.441

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.99	Mean	9.54
Maximum	18.6	Median	9.19
SD	6.78	Std. Error of Mean	2.768
Coefficient of Variation	0.711	Skewness	0.202
Mean of logged Data	1.974	SD of logged Data	0.885

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.12	95% Adjusted-CLT UCL (Chen-1995)	14.34
		95% Modified-t UCL (Johnson-1978)	15.16

Nonparametric Distribution Free UCLs

95% CLT UCL	14.09	95% Jackknife UCL	15.12
95% Standard Bootstrap UCL	13.61	95% Bootstrap-t UCL	16.01
95% Hall's Bootstrap UCL	12.48	95% Percentile Bootstrap UCL	13.8
95% BCA Bootstrap UCL	14		
90% Chebyshev(Mean, Sd) UCL	17.84	95% Chebyshev(Mean, Sd) UCL	21.61
97.5% Chebyshev(Mean, Sd) UCL	26.83	99% Chebyshev(Mean, Sd) UCL	37.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.03	Mean	1.223
Maximum	1.315	Median	1.278
SD	0.117	Std. Error of Mean	0.0478
Coefficient of Variation	0.0957	Skewness	-1.161
Mean of logged Data	0.198	SD of logged Data	0.0998

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.32	95% Adjusted-CLT UCL (Chen-1995)	1.278
		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.302	95% Jackknife UCL	1.32
95% Standard Bootstrap UCL	1.295	95% Bootstrap-t UCL	1.299
95% Hall's Bootstrap UCL	1.274	95% Percentile Bootstrap UCL	1.295
95% BCA Bootstrap UCL	1.28		
90% Chebyshev(Mean, Sd) UCL	1.367	95% Chebyshev(Mean, Sd) UCL	1.432
97.5% Chebyshev(Mean, Sd) UCL	1.522	99% Chebyshev(Mean, Sd) UCL	1.699

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.28	Mean	4.965
Maximum	7.49	Median	4.94
SD	2.257	Std. Error of Mean	0.921
Coefficient of Variation	0.455	Skewness	-0.043
Mean of logged Data	1.505	SD of logged Data	0.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.821	95% Adjusted-CLT UCL (Chen-1995)	6.463
		95% Modified-t UCL (Johnson-1978)	6.819

Nonparametric Distribution Free UCLs

95% CLT UCL	6.48	95% Jackknife UCL	6.821
95% Standard Bootstrap UCL	6.346	95% Bootstrap-t UCL	6.854
95% Hall's Bootstrap UCL	5.872	95% Percentile Bootstrap UCL	6.383
95% BCA Bootstrap UCL	6.385		
90% Chebyshev(Mean, Sd) UCL	7.729	95% Chebyshev(Mean, Sd) UCL	8.981
97.5% Chebyshev(Mean, Sd) UCL	10.72	99% Chebyshev(Mean, Sd) UCL	14.13

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.97	Mean	1.738
Maximum	2.74	Median	1.64
SD	0.784	Std. Error of Mean	0.32
Coefficient of Variation	0.451	Skewness	0.234
Mean of logged Data	0.462	SD of logged Data	0.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.383	95% Adjusted-CLT UCL (Chen-1995)	2.297
		95% Modified-t UCL (Johnson-1978)	2.388

Nonparametric Distribution Free UCLs

95% CLT UCL	2.264	95% Jackknife UCL	2.383
95% Standard Bootstrap UCL	2.229	95% Bootstrap-t UCL	2.374
95% Hall's Bootstrap UCL	2.087	95% Percentile Bootstrap UCL	2.228
95% BCA Bootstrap UCL	2.179		
90% Chebyshev(Mean, Sd) UCL	2.698	95% Chebyshev(Mean, Sd) UCL	3.133
97.5% Chebyshev(Mean, Sd) UCL	3.737	99% Chebyshev(Mean, Sd) UCL	4.923

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.41	Mean	6.363
Maximum	13.1	Median	5.585
SD	4.256	Std. Error of Mean	1.737
Coefficient of Variation	0.669	Skewness	0.726
Mean of logged Data	1.651	SD of logged Data	0.701

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.864	95% Adjusted-CLT UCL (Chen-1995)	9.771
		95% Modified-t UCL (Johnson-1978)	9.95

Nonparametric Distribution Free UCLs

95% CLT UCL	9.221	95% Jackknife UCL	9.864
95% Standard Bootstrap UCL	9.019	95% Bootstrap-t UCL	11
95% Hall's Bootstrap UCL	8.807	95% Percentile Bootstrap UCL	9.015
95% BCA Bootstrap UCL	9.578		
90% Chebyshev(Mean, Sd) UCL	11.58	95% Chebyshev(Mean, Sd) UCL	13.94
97.5% Chebyshev(Mean, Sd) UCL	17.21	99% Chebyshev(Mean, Sd) UCL	23.65

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.29	Mean	8.973
Maximum	17.6	Median	8.645
SD	5.866	Std. Error of Mean	2.395
Coefficient of Variation	0.654	Skewness	0.44
Mean of logged Data	1.989	SD of logged Data	0.726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.8	95% Adjusted-CLT UCL (Chen-1995)	13.37
		95% Modified-t UCL (Johnson-1978)	13.87

Nonparametric Distribution Free UCLs

95% CLT UCL	12.91	95% Jackknife UCL	13.8
95% Standard Bootstrap UCL	12.54	95% Bootstrap-t UCL	15.17
95% Hall's Bootstrap UCL	11.84	95% Percentile Bootstrap UCL	12.53
95% BCA Bootstrap UCL	12.84		
90% Chebyshev(Mean, Sd) UCL	16.16	95% Chebyshev(Mean, Sd) UCL	19.41
97.5% Chebyshev(Mean, Sd) UCL	23.93	99% Chebyshev(Mean, Sd) UCL	32.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:22:44 PM
From File	38002C.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	6.65	Mean	10.17
Maximum	12.5	Median	10.8
SD	2.06	Std. Error of Mean	0.841
Coefficient of Variation	0.203	Skewness	-1.03
Mean of logged Data	2.3	SD of logged Data	0.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.86	95% Adjusted-CLT UCL (Chen-1995)	11.17
		95% Modified-t UCL (Johnson-1978)	11.8

Nonparametric Distribution Free UCLs

95% CLT UCL	11.55	95% Jackknife UCL	11.86
95% Standard Bootstrap UCL	11.43	95% Bootstrap-t UCL	11.56
95% Hall's Bootstrap UCL	11.21	95% Percentile Bootstrap UCL	11.31
95% BCA Bootstrap UCL	11.23		
90% Chebyshev(Mean, Sd) UCL	12.69	95% Chebyshev(Mean, Sd) UCL	13.83
97.5% Chebyshev(Mean, Sd) UCL	15.42	99% Chebyshev(Mean, Sd) UCL	18.54

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.35	Mean	14.13
Maximum	32.7	Median	11.25
SD	9.234	Std. Error of Mean	3.77
Coefficient of Variation	0.654	Skewness	2.283

Mean of logged Data	2.522	SD of logged Data	0.502

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.72	95% Adjusted-CLT UCL (Chen-1995)	24.08
		95% Modified-t UCL (Johnson-1978)	22.31

Nonparametric Distribution Free UCLs

95% CLT UCL	20.33	95% Jackknife UCL	21.72
95% Standard Bootstrap UCL	19.82	95% Bootstrap-t UCL	83.85
95% Hall's Bootstrap UCL	68.31	95% Percentile Bootstrap UCL	21.33
95% BCA Bootstrap UCL	21.95		
90% Chebyshev(Mean, Sd) UCL	25.43	95% Chebyshev(Mean, Sd) UCL	30.56
97.5% Chebyshev(Mean, Sd) UCL	37.67	99% Chebyshev(Mean, Sd) UCL	51.63

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	30.56

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	27.2	Mean	38.53
Maximum	45.4	Median	39.5
SD	6.451	Std. Error of Mean	2.633
Coefficient of Variation	0.167	Skewness	-1.142
Mean of logged Data	3.638	SD of logged Data	0.183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.84	95% Adjusted-CLT UCL (Chen-1995)	41.55
		95% Modified-t UCL (Johnson-1978)	43.64

Nonparametric Distribution Free UCLs

95% CLT UCL	42.86	95% Jackknife UCL	43.84
95% Standard Bootstrap UCL	42.51	95% Bootstrap-t UCL	42.48
95% Hall's Bootstrap UCL	41.72	95% Percentile Bootstrap UCL	42.3
95% BCA Bootstrap UCL	42.05		
90% Chebyshev(Mean, Sd) UCL	46.43	95% Chebyshev(Mean, Sd) UCL	50.01
97.5% Chebyshev(Mean, Sd) UCL	54.98	99% Chebyshev(Mean, Sd) UCL	64.74

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.885	Mean	1.593
Maximum	4.815	Median	0.983
SD	1.579	Std. Error of Mean	0.645
Coefficient of Variation	0.991	Skewness	2.445
Mean of logged Data	0.217	SD of logged Data	0.665

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.892	95% Adjusted-CLT UCL (Chen-1995)	3.341
		95% Modified-t UCL (Johnson-1978)	2.999

Nonparametric Distribution Free UCLs

95% CLT UCL	2.654	95% Jackknife UCL	2.892
95% Standard Bootstrap UCL	2.583	95% Bootstrap-t UCL	28.13
95% Hall's Bootstrap UCL	30.1	95% Percentile Bootstrap UCL	2.868
95% BCA Bootstrap UCL	2.901		
90% Chebyshev(Mean, Sd) UCL	3.527	95% Chebyshev(Mean, Sd) UCL	4.403
97.5% Chebyshev(Mean, Sd) UCL	5.619	99% Chebyshev(Mean, Sd) UCL	8.007

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.403

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.473	Mean	0.508
Maximum	0.53	Median	0.518
SD	0.0254	Std. Error of Mean	0.0104
Coefficient of Variation	0.05	Skewness	-0.774
Mean of logged Data	-0.679	SD of logged Data	0.0507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.529	95% Adjusted-CLT UCL (Chen-1995)	0.521
		95% Modified-t UCL (Johnson-1978)	0.528

Nonparametric Distribution Free UCLs

95% CLT UCL	0.525	95% Jackknife UCL	0.529
95% Standard Bootstrap UCL	0.523	95% Bootstrap-t UCL	0.525
95% Hall's Bootstrap UCL	0.518	95% Percentile Bootstrap UCL	0.523
95% BCA Bootstrap UCL	0.521		
90% Chebyshev(Mean, Sd) UCL	0.539	95% Chebyshev(Mean, Sd) UCL	0.553
97.5% Chebyshev(Mean, Sd) UCL	0.573	99% Chebyshev(Mean, Sd) UCL	0.611

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	2.061
Maximum	2.155	Median	2.1
SD	0.103	Std. Error of Mean	0.0419
Coefficient of Variation	0.0498	Skewness	-0.76
Mean of logged Data	0.722	SD of logged Data	0.0505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.145	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.143

Nonparametric Distribution Free UCLs

95% CLT UCL	2.13	95% Jackknife UCL	2.145
95% Standard Bootstrap UCL	2.123	95% Bootstrap-t UCL	2.128
95% Hall's Bootstrap UCL	2.104	95% Percentile Bootstrap UCL	2.123
95% BCA Bootstrap UCL	2.112		
90% Chebyshev(Mean, Sd) UCL	2.187	95% Chebyshev(Mean, Sd) UCL	2.244

97.5% Chebyshev(Mean, Sd) UCL	2.323	99% Chebyshev(Mean, Sd) UCL	2.478

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	2.327
Maximum	2.9	Median	2.183
SD	0.433	Std. Error of Mean	0.177
Coefficient of Variation	0.186	Skewness	0.691
Mean of logged Data	0.831	SD of logged Data	0.181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.683	95% Adjusted-CLT UCL (Chen-1995)	2.67
		95% Modified-t UCL (Johnson-1978)	2.691

Nonparametric Distribution Free UCLs

95% CLT UCL	2.617	95% Jackknife UCL	2.683
95% Standard Bootstrap UCL	2.587	95% Bootstrap-t UCL	3.175
95% Hall's Bootstrap UCL	5.359	95% Percentile Bootstrap UCL	2.598
95% BCA Bootstrap UCL	2.61		
90% Chebyshev(Mean, Sd) UCL	2.857	95% Chebyshev(Mean, Sd) UCL	3.097
97.5% Chebyshev(Mean, Sd) UCL	3.43	99% Chebyshev(Mean, Sd) UCL	4.084

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	2.576
Maximum	3.8	Median	2.12
SD	0.859	Std. Error of Mean	0.351

Coefficient of Variation	0.334	Skewness	0.961
Mean of logged Data	0.904	SD of logged Data	0.311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.283	95% Adjusted-CLT UCL (Chen-1995)	3.3
		95% Modified-t UCL (Johnson-1978)	3.306

Nonparametric Distribution Free UCLs

95% CLT UCL	3.153	95% Jackknife UCL	3.283
95% Standard Bootstrap UCL	3.1	95% Bootstrap-t UCL	7.197
95% Hall's Bootstrap UCL	8.923	95% Percentile Bootstrap UCL	3.122
95% BCA Bootstrap UCL	3.175		
90% Chebyshev(Mean, Sd) UCL	3.628	95% Chebyshev(Mean, Sd) UCL	4.105
97.5% Chebyshev(Mean, Sd) UCL	4.767	99% Chebyshev(Mean, Sd) UCL	6.067

Suggested UCL to Use

95% Student's-t UCL	3.283	or 95% Modified-t UCL	3.306

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.955	Mean	4.013
Maximum	5.44	Median	3.733
SD	1.113	Std. Error of Mean	0.454
Coefficient of Variation	0.277	Skewness	0.46
Mean of logged Data	1.358	SD of logged Data	0.274

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.929	95% Adjusted-CLT UCL (Chen-1995)	4.852
		95% Modified-t UCL (Johnson-1978)	4.943

Nonparametric Distribution Free UCLs

95% CLT UCL	4.76	95% Jackknife UCL	4.929
95% Standard Bootstrap UCL	4.689	95% Bootstrap-t UCL	5.203
95% Hall's Bootstrap UCL	4.866	95% Percentile Bootstrap UCL	4.741
95% BCA Bootstrap UCL	4.776		
90% Chebyshev(Mean, Sd) UCL	5.376	95% Chebyshev(Mean, Sd) UCL	5.993
97.5% Chebyshev(Mean, Sd) UCL	6.85	99% Chebyshev(Mean, Sd) UCL	8.533

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.4	Mean	2.883
Maximum	3.315	Median	2.973
SD	0.387	Std. Error of Mean	0.158
Coefficient of Variation	0.134	Skewness	-0.462
Mean of logged Data	1.051	SD of logged Data	0.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.202	95% Adjusted-CLT UCL (Chen-1995)	3.111
		95% Modified-t UCL (Johnson-1978)	3.197

Nonparametric Distribution Free UCLs

95% CLT UCL	3.143	95% Jackknife UCL	3.202
95% Standard Bootstrap UCL	3.122	95% Bootstrap-t UCL	3.143
95% Hall's Bootstrap UCL	3.085	95% Percentile Bootstrap UCL	3.123
95% BCA Bootstrap UCL	3.091		
90% Chebyshev(Mean, Sd) UCL	3.357	95% Chebyshev(Mean, Sd) UCL	3.572
97.5% Chebyshev(Mean, Sd) UCL	3.87	99% Chebyshev(Mean, Sd) UCL	4.455

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	2.061
Maximum	2.155	Median	2.1
SD	0.103	Std. Error of Mean	0.0419
Coefficient of Variation	0.0498	Skewness	-0.76

Mean of logged Data	0.722	SD of logged Data	0.0505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.145	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.143

Nonparametric Distribution Free UCLs

95% CLT UCL	2.13	95% Jackknife UCL	2.145
95% Standard Bootstrap UCL	2.124	95% Bootstrap-t UCL	2.13
95% Hall's Bootstrap UCL	2.105	95% Percentile Bootstrap UCL	2.123
95% BCA Bootstrap UCL	2.117		
90% Chebyshev(Mean, Sd) UCL	2.187	95% Chebyshev(Mean, Sd) UCL	2.244
97.5% Chebyshev(Mean, Sd) UCL	2.323	99% Chebyshev(Mean, Sd) UCL	2.478

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	2.923
Maximum	4.33	Median	2.703
SD	1.065	Std. Error of Mean	0.435
Coefficient of Variation	0.364	Skewness	0.365
Mean of logged Data	1.017	SD of logged Data	0.366

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.8	95% Adjusted-CLT UCL (Chen-1995)	3.708
		95% Modified-t UCL (Johnson-1978)	3.81

Nonparametric Distribution Free UCLs

95% CLT UCL	3.639	95% Jackknife UCL	3.8
95% Standard Bootstrap UCL	3.585	95% Bootstrap-t UCL	3.781
95% Hall's Bootstrap UCL	3.376	95% Percentile Bootstrap UCL	3.57
95% BCA Bootstrap UCL	3.623		

90% Chebyshev(Mean, Sd) UCL	4.228	95% Chebyshev(Mean, Sd) UCL	4.819
97.5% Chebyshev(Mean, Sd) UCL	5.639	99% Chebyshev(Mean, Sd) UCL	7.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.955	Mean	3.171
Maximum	3.315	Median	3.233
SD	0.158	Std. Error of Mean	0.0646
Coefficient of Variation	0.0499	Skewness	-0.768
Mean of logged Data	1.153	SD of logged Data	0.0506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.301	95% Adjusted-CLT UCL (Chen-1995)	3.256
		95% Modified-t UCL (Johnson-1978)	3.298

Nonparametric Distribution Free UCLs

95% CLT UCL	3.277	95% Jackknife UCL	3.301
95% Standard Bootstrap UCL	3.27	95% Bootstrap-t UCL	3.278
95% Hall's Bootstrap UCL	3.236	95% Percentile Bootstrap UCL	3.27
95% BCA Bootstrap UCL	3.25		
90% Chebyshev(Mean, Sd) UCL	3.365	95% Chebyshev(Mean, Sd) UCL	3.453
97.5% Chebyshev(Mean, Sd) UCL	3.575	99% Chebyshev(Mean, Sd) UCL	3.814

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	3.445
Maximum	4.95	Median	3.485

SD	1.578	Std. Error of Mean	0.644
Coefficient of Variation	0.458	Skewness	-0.00779
Mean of logged Data	1.14	SD of logged Data	0.49

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.743	95% Adjusted-CLT UCL (Chen-1995)	4.503
		95% Modified-t UCL (Johnson-1978)	4.743

Nonparametric Distribution Free UCLs

95% CLT UCL	4.505	95% Jackknife UCL	4.743
95% Standard Bootstrap UCL	4.378	95% Bootstrap-t UCL	4.745
95% Hall's Bootstrap UCL	3.966	95% Percentile Bootstrap UCL	4.416
95% BCA Bootstrap UCL	4.406		
90% Chebyshev(Mean, Sd) UCL	5.378	95% Chebyshev(Mean, Sd) UCL	6.254
97.5% Chebyshev(Mean, Sd) UCL	7.469	99% Chebyshev(Mean, Sd) UCL	9.856

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.18	Mean	1.268
Maximum	1.325	Median	1.295
SD	0.0643	Std. Error of Mean	0.0263
Coefficient of Variation	0.0507	Skewness	-0.8
Mean of logged Data	0.237	SD of logged Data	0.0515

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.321	95% Adjusted-CLT UCL (Chen-1995)	1.302
		95% Modified-t UCL (Johnson-1978)	1.32

Nonparametric Distribution Free UCLs

95% CLT UCL	1.312	95% Jackknife UCL	1.321
95% Standard Bootstrap UCL	1.308	95% Bootstrap-t UCL	1.312

95% Hall's Bootstrap UCL	1.295	95% Percentile Bootstrap UCL	1.308
95% BCA Bootstrap UCL	1.298		
90% Chebyshev(Mean, Sd) UCL	1.347	95% Chebyshev(Mean, Sd) UCL	1.383
97.5% Chebyshev(Mean, Sd) UCL	1.432	99% Chebyshev(Mean, Sd) UCL	1.53

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.64	Mean	2.96
Maximum	3.315	Median	2.973
SD	0.279	Std. Error of Mean	0.114
Coefficient of Variation	0.0941	Skewness	-0.0301
Mean of logged Data	1.081	SD of logged Data	0.0946

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.189	95% Adjusted-CLT UCL (Chen-1995)	3.146
		95% Modified-t UCL (Johnson-1978)	3.189

Nonparametric Distribution Free UCLs

95% CLT UCL	3.147	95% Jackknife UCL	3.189
95% Standard Bootstrap UCL	3.127	95% Bootstrap-t UCL	3.186
95% Hall's Bootstrap UCL	3.168	95% Percentile Bootstrap UCL	3.127
95% BCA Bootstrap UCL	3.125		
90% Chebyshev(Mean, Sd) UCL	3.301	95% Chebyshev(Mean, Sd) UCL	3.456
97.5% Chebyshev(Mean, Sd) UCL	3.67	99% Chebyshev(Mean, Sd) UCL	4.091

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.9	Mean	4.444
Maximum	10.5	Median	4.66
SD	3.509	Std. Error of Mean	1.433
Coefficient of Variation	0.79	Skewness	0.949
Mean of logged Data	1.153	SD of logged Data	0.986

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.331	95% Adjusted-CLT UCL (Chen-1995)	7.394
		95% Modified-t UCL (Johnson-1978)	7.424

Nonparametric Distribution Free UCLs

95% CLT UCL	6.801	95% Jackknife UCL	7.331
95% Standard Bootstrap UCL	6.641	95% Bootstrap-t UCL	8.169
95% Hall's Bootstrap UCL	8.471	95% Percentile Bootstrap UCL	6.682
95% BCA Bootstrap UCL	6.98		
90% Chebyshev(Mean, Sd) UCL	8.742	95% Chebyshev(Mean, Sd) UCL	10.69
97.5% Chebyshev(Mean, Sd) UCL	13.39	99% Chebyshev(Mean, Sd) UCL	18.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.955	Mean	3.171
Maximum	3.315	Median	3.233
SD	0.158	Std. Error of Mean	0.0646
Coefficient of Variation	0.0499	Skewness	-0.768
Mean of logged Data	1.153	SD of logged Data	0.0506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.301	95% Adjusted-CLT UCL (Chen-1995)	3.256
		95% Modified-t UCL (Johnson-1978)	3.298

Nonparametric Distribution Free UCLs

95% CLT UCL	3.277	95% Jackknife UCL	3.301
95% Standard Bootstrap UCL	3.269	95% Bootstrap-t UCL	3.28
95% Hall's Bootstrap UCL	3.236	95% Percentile Bootstrap UCL	3.268
95% BCA Bootstrap UCL	3.258		
90% Chebyshev(Mean, Sd) UCL	3.365	95% Chebyshev(Mean, Sd) UCL	3.453
97.5% Chebyshev(Mean, Sd) UCL	3.575	99% Chebyshev(Mean, Sd) UCL	3.814

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.4	Mean	3.923
Maximum	5.57	Median	3.82
SD	1.301	Std. Error of Mean	0.531
Coefficient of Variation	0.332	Skewness	0.104
Mean of logged Data	1.319	SD of logged Data	0.343

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.993	95% Adjusted-CLT UCL (Chen-1995)	4.82
		95% Modified-t UCL (Johnson-1978)	4.997

Nonparametric Distribution Free UCLs

95% CLT UCL	4.796	95% Jackknife UCL	4.993
95% Standard Bootstrap UCL	4.707	95% Bootstrap-t UCL	5.038
95% Hall's Bootstrap UCL	4.489	95% Percentile Bootstrap UCL	4.71
95% BCA Bootstrap UCL	4.757		
90% Chebyshev(Mean, Sd) UCL	5.516	95% Chebyshev(Mean, Sd) UCL	6.238
97.5% Chebyshev(Mean, Sd) UCL	7.24	99% Chebyshev(Mean, Sd) UCL	9.208

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:23:47 PM
From File	38002D.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.91	Mean	10.94
Maximum	11.8	Median	10.9
SD	0.709	Std. Error of Mean	0.289
Coefficient of Variation	0.0648	Skewness	-0.191
Mean of logged Data	2.39	SD of logged Data	0.0653

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.52	95% Adjusted-CLT UCL (Chen-1995)	11.39
		95% Modified-t UCL (Johnson-1978)	11.51

Nonparametric Distribution Free UCLs

95% CLT UCL	11.41	95% Jackknife UCL	11.52
95% Standard Bootstrap UCL	11.37	95% Bootstrap-t UCL	11.52
95% Hall's Bootstrap UCL	11.46	95% Percentile Bootstrap UCL	11.37
95% BCA Bootstrap UCL	11.35		
90% Chebyshev(Mean, Sd) UCL	11.8	95% Chebyshev(Mean, Sd) UCL	12.2
97.5% Chebyshev(Mean, Sd) UCL	12.74	99% Chebyshev(Mean, Sd) UCL	13.81

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	9.72	Mean	10.27
Maximum	11.4	Median	10.1
SD	0.578	Std. Error of Mean	0.236
Coefficient of Variation	0.0563	Skewness	1.959

Mean of logged Data	2.328	SD of logged Data	0.0544

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.75	95% Adjusted-CLT UCL (Chen-1995)	10.86
		95% Modified-t UCL (Johnson-1978)	10.78

Nonparametric Distribution Free UCLs

95% CLT UCL	10.66	95% Jackknife UCL	10.75
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	10.98	95% Chebyshev(Mean, Sd) UCL	11.3
97.5% Chebyshev(Mean, Sd) UCL	11.74	99% Chebyshev(Mean, Sd) UCL	12.62

Suggested UCL to Use

95% Student's-t UCL	10.75	or 95% Modified-t UCL	10.78

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	37	Mean	40.22
Maximum	43.1	Median	39.85
SD	2.139	Std. Error of Mean	0.873
Coefficient of Variation	0.0532	Skewness	-0.134
Mean of logged Data	3.693	SD of logged Data	0.0534

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.98	95% Adjusted-CLT UCL (Chen-1995)	41.6
		95% Modified-t UCL (Johnson-1978)	41.97

Nonparametric Distribution Free UCLs

95% CLT UCL	41.65	95% Jackknife UCL	41.98
95% Standard Bootstrap UCL	41.52	95% Bootstrap-t UCL	42.17
95% Hall's Bootstrap UCL	42.56	95% Percentile Bootstrap UCL	41.53
95% BCA Bootstrap UCL	41.35		
90% Chebyshev(Mean, Sd) UCL	42.84	95% Chebyshev(Mean, Sd) UCL	44.02
97.5% Chebyshev(Mean, Sd) UCL	45.67	99% Chebyshev(Mean, Sd) UCL	48.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.639	Mean	0.916
Maximum	1.06	Median	1.005
SD	0.175	Std. Error of Mean	0.0713
Coefficient of Variation	0.191	Skewness	-1.084
Mean of logged Data	-0.105	SD of logged Data	0.209

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.059	95% Adjusted-CLT UCL (Chen-1995)	0.999
		95% Modified-t UCL (Johnson-1978)	1.054

Nonparametric Distribution Free UCLs

95% CLT UCL	1.033	95% Jackknife UCL	1.059
95% Standard Bootstrap UCL	1.023	95% Bootstrap-t UCL	1.027
95% Hall's Bootstrap UCL	0.988	95% Percentile Bootstrap UCL	1.023
95% BCA Bootstrap UCL	1.012		
90% Chebyshev(Mean, Sd) UCL	1.13	95% Chebyshev(Mean, Sd) UCL	1.227
97.5% Chebyshev(Mean, Sd) UCL	1.361	99% Chebyshev(Mean, Sd) UCL	1.625

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.5	Mean	0.521
Maximum	0.53	Median	0.525

SD	0.0116	Std. Error of Mean	0.00473
Coefficient of Variation	0.0222	Skewness	-1.459
Mean of logged Data	-0.653	SD of logged Data	0.0225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.53	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.53

Nonparametric Distribution Free UCLs

95% CLT UCL	0.529	95% Jackknife UCL	0.53
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.535	95% Chebyshev(Mean, Sd) UCL	0.541
97.5% Chebyshev(Mean, Sd) UCL	0.55	99% Chebyshev(Mean, Sd) UCL	0.568

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	2.118
Maximum	2.16	Median	2.135
SD	0.0491	Std. Error of Mean	0.02
Coefficient of Variation	0.0232	Skewness	-1.445
Mean of logged Data	0.75	SD of logged Data	0.0234

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.159	95% Adjusted-CLT UCL (Chen-1995)	2.139
		95% Modified-t UCL (Johnson-1978)	2.157

Nonparametric Distribution Free UCLs

95% CLT UCL	2.151	95% Jackknife UCL	2.159
95% Standard Bootstrap UCL	2.148	95% Bootstrap-t UCL	2.148

95% Hall's Bootstrap UCL	2.14	95% Percentile Bootstrap UCL	2.145
95% BCA Bootstrap UCL	2.142		
90% Chebyshev(Mean, Sd) UCL	2.178	95% Chebyshev(Mean, Sd) UCL	2.206
97.5% Chebyshev(Mean, Sd) UCL	2.243	99% Chebyshev(Mean, Sd) UCL	2.318

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.74	Mean	2.059
Maximum	2.16	Median	2.135
SD	0.163	Std. Error of Mean	0.0667
Coefficient of Variation	0.0794	Skewness	-2.043
Mean of logged Data	0.719	SD of logged Data	0.0843

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.194	95% Adjusted-CLT UCL (Chen-1995)	2.109
		95% Modified-t UCL (Johnson-1978)	2.184

Nonparametric Distribution Free UCLs

95% CLT UCL	2.169	95% Jackknife UCL	2.194
95% Standard Bootstrap UCL	2.162	95% Bootstrap-t UCL	2.147
95% Hall's Bootstrap UCL	2.121	95% Percentile Bootstrap UCL	2.146
95% BCA Bootstrap UCL	2.131		
90% Chebyshev(Mean, Sd) UCL	2.259	95% Chebyshev(Mean, Sd) UCL	2.35
97.5% Chebyshev(Mean, Sd) UCL	2.476	99% Chebyshev(Mean, Sd) UCL	2.723

Suggested UCL to Use

95% Student's-t UCL	2.194	or 95% Modified-t UCL	2.184

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	2.163
Maximum	2.36	Median	2.148
SD	0.108	Std. Error of Mean	0.044
Coefficient of Variation	0.0499	Skewness	1.274
Mean of logged Data	0.77	SD of logged Data	0.049

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.251	95% Adjusted-CLT UCL (Chen-1995)	2.259
		95% Modified-t UCL (Johnson-1978)	2.255

Nonparametric Distribution Free UCLs

95% CLT UCL	2.235	95% Jackknife UCL	2.251
95% Standard Bootstrap UCL	2.228	95% Bootstrap-t UCL	2.297
95% Hall's Bootstrap UCL	2.668	95% Percentile Bootstrap UCL	2.228
95% BCA Bootstrap UCL	2.254		
90% Chebyshev(Mean, Sd) UCL	2.295	95% Chebyshev(Mean, Sd) UCL	2.354
97.5% Chebyshev(Mean, Sd) UCL	2.438	99% Chebyshev(Mean, Sd) UCL	2.601

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.64	Mean	3.221
Maximum	3.56	Median	3.305
SD	0.309	Std. Error of Mean	0.126
Coefficient of Variation	0.0961	Skewness	-1.566
Mean of logged Data	1.165	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.475	95% Adjusted-CLT UCL (Chen-1995)	3.342
		95% Modified-t UCL (Johnson-1978)	3.462

Nonparametric Distribution Free UCLs

95% CLT UCL	3.429	95% Jackknife UCL	3.475
95% Standard Bootstrap UCL	3.415	95% Bootstrap-t UCL	3.388
95% Hall's Bootstrap UCL	3.354	95% Percentile Bootstrap UCL	3.393
95% BCA Bootstrap UCL	3.366		
90% Chebyshev(Mean, Sd) UCL	3.6	95% Chebyshev(Mean, Sd) UCL	3.771
97.5% Chebyshev(Mean, Sd) UCL	4.01	99% Chebyshev(Mean, Sd) UCL	4.478

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.125	Mean	3.26
Maximum	3.325	Median	3.285
SD	0.075	Std. Error of Mean	0.0306
Coefficient of Variation	0.023	Skewness	-1.432
Mean of logged Data	1.182	SD of logged Data	0.0233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.322	95% Adjusted-CLT UCL (Chen-1995)	3.291
		95% Modified-t UCL (Johnson-1978)	3.319

Nonparametric Distribution Free UCLs

95% CLT UCL	3.31	95% Jackknife UCL	3.322
95% Standard Bootstrap UCL	3.307	95% Bootstrap-t UCL	3.304
95% Hall's Bootstrap UCL	3.293	95% Percentile Bootstrap UCL	3.303
95% BCA Bootstrap UCL	3.297		
90% Chebyshev(Mean, Sd) UCL	3.352	95% Chebyshev(Mean, Sd) UCL	3.394
97.5% Chebyshev(Mean, Sd) UCL	3.451	99% Chebyshev(Mean, Sd) UCL	3.565

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	2.118
Maximum	2.16	Median	2.135
SD	0.0491	Std. Error of Mean	0.02
Coefficient of Variation	0.0232	Skewness	-1.445
Mean of logged Data	0.75	SD of logged Data	0.0234

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.159	95% Adjusted-CLT UCL (Chen-1995)	2.139
		95% Modified-t UCL (Johnson-1978)	2.157

Nonparametric Distribution Free UCLs

95% CLT UCL	2.151	95% Jackknife UCL	2.159
95% Standard Bootstrap UCL	2.149	95% Bootstrap-t UCL	2.146
95% Hall's Bootstrap UCL	2.14	95% Percentile Bootstrap UCL	2.146
95% BCA Bootstrap UCL	2.142		
90% Chebyshev(Mean, Sd) UCL	2.178	95% Chebyshev(Mean, Sd) UCL	2.206
97.5% Chebyshev(Mean, Sd) UCL	2.243	99% Chebyshev(Mean, Sd) UCL	2.318

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.155	Mean	2.518
Maximum	3.17	Median	2.345
SD	0.435	Std. Error of Mean	0.178
Coefficient of Variation	0.173	Skewness	0.832
Mean of logged Data	0.911	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.875	95% Adjusted-CLT UCL (Chen-1995)	2.874
		95% Modified-t UCL (Johnson-1978)	2.885

Nonparametric Distribution Free UCLs

95% CLT UCL	2.81	95% Jackknife UCL	2.875
95% Standard Bootstrap UCL	2.783	95% Bootstrap-t UCL	3.218
95% Hall's Bootstrap UCL	3.173	95% Percentile Bootstrap UCL	2.805
95% BCA Bootstrap UCL	2.805		
90% Chebyshev(Mean, Sd) UCL	3.05	95% Chebyshev(Mean, Sd) UCL	3.291
97.5% Chebyshev(Mean, Sd) UCL	3.626	99% Chebyshev(Mean, Sd) UCL	4.284

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.125	Mean	3.26
Maximum	3.325	Median	3.285
SD	0.075	Std. Error of Mean	0.0306
Coefficient of Variation	0.023	Skewness	-1.432
Mean of logged Data	1.182	SD of logged Data	0.0233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.322	95% Adjusted-CLT UCL (Chen-1995)	3.291
		95% Modified-t UCL (Johnson-1978)	3.319

Nonparametric Distribution Free UCLs

95% CLT UCL	3.31	95% Jackknife UCL	3.322
95% Standard Bootstrap UCL	3.309	95% Bootstrap-t UCL	3.304
95% Hall's Bootstrap UCL	3.294	95% Percentile Bootstrap UCL	3.302
95% BCA Bootstrap UCL	3.293		
90% Chebyshev(Mean, Sd) UCL	3.352	95% Chebyshev(Mean, Sd) UCL	3.394
97.5% Chebyshev(Mean, Sd) UCL	3.451	99% Chebyshev(Mean, Sd) UCL	3.565

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.01	Mean	2.603
Maximum	3.13	Median	2.6
SD	0.545	Std. Error of Mean	0.222
Coefficient of Variation	0.209	Skewness	-0.0281
Mean of logged Data	0.938	SD of logged Data	0.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.051	95% Adjusted-CLT UCL (Chen-1995)	2.966
		95% Modified-t UCL (Johnson-1978)	3.05

Nonparametric Distribution Free UCLs

95% CLT UCL	2.968	95% Jackknife UCL	3.051
95% Standard Bootstrap UCL	2.933	95% Bootstrap-t UCL	3.051
95% Hall's Bootstrap UCL	2.791	95% Percentile Bootstrap UCL	2.937
95% BCA Bootstrap UCL	2.936		
90% Chebyshev(Mean, Sd) UCL	3.27	95% Chebyshev(Mean, Sd) UCL	3.572
97.5% Chebyshev(Mean, Sd) UCL	3.992	99% Chebyshev(Mean, Sd) UCL	4.816

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.25	Mean	1.304
Maximum	1.33	Median	1.315
SD	0.0301	Std. Error of Mean	0.0123
Coefficient of Variation	0.0231	Skewness	-1.449
Mean of logged Data	0.265	SD of logged Data	0.0233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.329	95% Adjusted-CLT UCL (Chen-1995)	1.317
		95% Modified-t UCL (Johnson-1978)	1.328

Nonparametric Distribution Free UCLs

95% CLT UCL	1.324	95% Jackknife UCL	1.329
95% Standard Bootstrap UCL	1.323	95% Bootstrap-t UCL	1.322
95% Hall's Bootstrap UCL	1.317	95% Percentile Bootstrap UCL	1.321
95% BCA Bootstrap UCL	1.318		
90% Chebyshev(Mean, Sd) UCL	1.341	95% Chebyshev(Mean, Sd) UCL	1.358
97.5% Chebyshev(Mean, Sd) UCL	1.381	99% Chebyshev(Mean, Sd) UCL	1.426

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.125	Mean	3.26
Maximum	3.325	Median	3.285
SD	0.075	Std. Error of Mean	0.0306
Coefficient of Variation	0.023	Skewness	-1.432
Mean of logged Data	1.182	SD of logged Data	0.0233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.322	95% Adjusted-CLT UCL (Chen-1995)	3.291
		95% Modified-t UCL (Johnson-1978)	3.319

Nonparametric Distribution Free UCLs

95% CLT UCL	3.31	95% Jackknife UCL	3.322
95% Standard Bootstrap UCL	3.306	95% Bootstrap-t UCL	3.305
95% Hall's Bootstrap UCL	3.294	95% Percentile Bootstrap UCL	3.303
95% BCA Bootstrap UCL	3.298		
90% Chebyshev(Mean, Sd) UCL	3.352	95% Chebyshev(Mean, Sd) UCL	3.394
97.5% Chebyshev(Mean, Sd) UCL	3.451	99% Chebyshev(Mean, Sd) UCL	3.565

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.27	Mean	2.727
Maximum	6.39	Median	2.265
SD	1.842	Std. Error of Mean	0.752
Coefficient of Variation	0.676	Skewness	2.159
Mean of logged Data	0.863	SD of logged Data	0.54

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.242	95% Adjusted-CLT UCL (Chen-1995)	4.672
		95% Modified-t UCL (Johnson-1978)	4.353

Nonparametric Distribution Free UCLs

95% CLT UCL	3.964	95% Jackknife UCL	4.242
95% Standard Bootstrap UCL	3.807	95% Bootstrap-t UCL	7.214
95% Hall's Bootstrap UCL	10.5	95% Percentile Bootstrap UCL	4.015
95% BCA Bootstrap UCL	4.337		
90% Chebyshev(Mean, Sd) UCL	4.983	95% Chebyshev(Mean, Sd) UCL	6.005
97.5% Chebyshev(Mean, Sd) UCL	7.424	99% Chebyshev(Mean, Sd) UCL	10.21

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.125	Mean	3.26
Maximum	3.325	Median	3.285
SD	0.075	Std. Error of Mean	0.0306
Coefficient of Variation	0.023	Skewness	-1.432
Mean of logged Data	1.182	SD of logged Data	0.0233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.322	95% Adjusted-CLT UCL (Chen-1995)	3.291
		95% Modified-t UCL (Johnson-1978)	3.319

Nonparametric Distribution Free UCLs

95% CLT UCL	3.31	95% Jackknife UCL	3.322
95% Standard Bootstrap UCL	3.306	95% Bootstrap-t UCL	3.304
95% Hall's Bootstrap UCL	3.293	95% Percentile Bootstrap UCL	3.3
95% BCA Bootstrap UCL	3.297		
90% Chebyshev(Mean, Sd) UCL	3.352	95% Chebyshev(Mean, Sd) UCL	3.394
97.5% Chebyshev(Mean, Sd) UCL	3.451	99% Chebyshev(Mean, Sd) UCL	3.565

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.54	Mean	2.956
Maximum	3.325	Median	2.993
SD	0.393	Std. Error of Mean	0.16
Coefficient of Variation	0.133	Skewness	-0.0616
Mean of logged Data	1.076	SD of logged Data	0.134

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.279	95% Adjusted-CLT UCL (Chen-1995)	3.216
		95% Modified-t UCL (Johnson-1978)	3.279

Nonparametric Distribution Free UCLs

95% CLT UCL	3.22	95% Jackknife UCL	3.279
95% Standard Bootstrap UCL	3.203	95% Bootstrap-t UCL	3.278
95% Hall's Bootstrap UCL	3.095	95% Percentile Bootstrap UCL	3.193
95% BCA Bootstrap UCL	3.191		
90% Chebyshev(Mean, Sd) UCL	3.437	95% Chebyshev(Mean, Sd) UCL	3.655
97.5% Chebyshev(Mean, Sd) UCL	3.958	99% Chebyshev(Mean, Sd) UCL	4.553

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:24:58 PM
From File	38002E.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.7	Mean	15.23
Maximum	18.5	Median	14.65
SD	2.552	Std. Error of Mean	1.042
Coefficient of Variation	0.168	Skewness	0.344
Mean of logged Data	2.712	SD of logged Data	0.166

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.33	95% Adjusted-CLT UCL (Chen-1995)	17.1
		95% Modified-t UCL (Johnson-1978)	17.36

Nonparametric Distribution Free UCLs

95% CLT UCL	16.95	95% Jackknife UCL	17.33
95% Standard Bootstrap UCL	16.78	95% Bootstrap-t UCL	17.25
95% Hall's Bootstrap UCL	16.45	95% Percentile Bootstrap UCL	16.77
95% BCA Bootstrap UCL	16.87		
90% Chebyshev(Mean, Sd) UCL	18.36	95% Chebyshev(Mean, Sd) UCL	19.77
97.5% Chebyshev(Mean, Sd) UCL	21.74	99% Chebyshev(Mean, Sd) UCL	25.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.9	Mean	34.88
Maximum	88.4	Median	21.45
SD	27.81	Std. Error of Mean	11.35
Coefficient of Variation	0.797	Skewness	1.936
Mean of logged Data	3.353	SD of logged Data	0.641

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.76	95% Adjusted-CLT UCL (Chen-1995)	63.15
		95% Modified-t UCL (Johnson-1978)	59.26

Nonparametric Distribution Free UCLs

95% CLT UCL	53.56	95% Jackknife UCL	57.76
95% Standard Bootstrap UCL	51.72	95% Bootstrap-t UCL	248.5
95% Hall's Bootstrap UCL	219.5	95% Percentile Bootstrap UCL	54.05
95% BCA Bootstrap UCL	61.95		
90% Chebyshev(Mean, Sd) UCL	68.94	95% Chebyshev(Mean, Sd) UCL	84.37
97.5% Chebyshev(Mean, Sd) UCL	105.8	99% Chebyshev(Mean, Sd) UCL	147.8

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48.9	Mean	54.25
Maximum	62.1	Median	52.5
SD	5.724	Std. Error of Mean	2.337
Coefficient of Variation	0.106	Skewness	0.568
Mean of logged Data	3.989	SD of logged Data	0.104

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.96	95% Adjusted-CLT UCL (Chen-1995)	58.67
		95% Modified-t UCL (Johnson-1978)	59.05

Nonparametric Distribution Free UCLs

95% CLT UCL	58.09	95% Jackknife UCL	58.96
95% Standard Bootstrap UCL	57.64	95% Bootstrap-t UCL	60.59
95% Hall's Bootstrap UCL	59.53	95% Percentile Bootstrap UCL	58
95% BCA Bootstrap UCL	58.33		
90% Chebyshev(Mean, Sd) UCL	61.26	95% Chebyshev(Mean, Sd) UCL	64.44
97.5% Chebyshev(Mean, Sd) UCL	68.84	99% Chebyshev(Mean, Sd) UCL	77.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.641	Mean	1.273
Maximum	2.18	Median	1.15
SD	0.542	Std. Error of Mean	0.221
Coefficient of Variation	0.426	Skewness	0.88
Mean of logged Data	0.167	SD of logged Data	0.424

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.719	95% Adjusted-CLT UCL (Chen-1995)	1.722
		95% Modified-t UCL (Johnson-1978)	1.732

Nonparametric Distribution Free UCLs

95% CLT UCL	1.637	95% Jackknife UCL	1.719
95% Standard Bootstrap UCL	1.608	95% Bootstrap-t UCL	2.025
95% Hall's Bootstrap UCL	2.398	95% Percentile Bootstrap UCL	1.585
95% BCA Bootstrap UCL	1.667		
90% Chebyshev(Mean, Sd) UCL	1.937	95% Chebyshev(Mean, Sd) UCL	2.237
97.5% Chebyshev(Mean, Sd) UCL	2.655	99% Chebyshev(Mean, Sd) UCL	3.474

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.515	Mean	3.543
Maximum	14	Median	0.955
SD	5.33	Std. Error of Mean	2.176
Coefficient of Variation	1.504	Skewness	2.082
Mean of logged Data	0.41	SD of logged Data	1.377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.928	95% Adjusted-CLT UCL (Chen-1995)	9.099
		95% Modified-t UCL (Johnson-1978)	8.236

Nonparametric Distribution Free UCLs

95% CLT UCL	7.123	95% Jackknife UCL	7.928
95% Standard Bootstrap UCL	6.75	95% Bootstrap-t UCL	36.35
95% Hall's Bootstrap UCL	28.12	95% Percentile Bootstrap UCL	7.404
95% BCA Bootstrap UCL	8.528		
90% Chebyshev(Mean, Sd) UCL	10.07	95% Chebyshev(Mean, Sd) UCL	13.03
97.5% Chebyshev(Mean, Sd) UCL	17.13	99% Chebyshev(Mean, Sd) UCL	25.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.09	Mean	7.264
Maximum	27.5	Median	2.545
SD	10.08	Std. Error of Mean	4.115
Coefficient of Variation	1.388	Skewness	2.283
Mean of logged Data	1.426	SD of logged Data	1.03

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.56	95% Adjusted-CLT UCL (Chen-1995)	18.13
		95% Modified-t UCL (Johnson-1978)	16.2

Nonparametric Distribution Free UCLs

95% CLT UCL	14.03	95% Jackknife UCL	15.56
95% Standard Bootstrap UCL	13.29	95% Bootstrap-t UCL	125.2
95% Hall's Bootstrap UCL	125.7	95% Percentile Bootstrap UCL	14.94
95% BCA Bootstrap UCL	19.03		
90% Chebyshev(Mean, Sd) UCL	19.61	95% Chebyshev(Mean, Sd) UCL	25.2
97.5% Chebyshev(Mean, Sd) UCL	32.96	99% Chebyshev(Mean, Sd) UCL	48.21

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.12	Mean	16.83
Maximum	53.7	Median	8.44
SD	20.32	Std. Error of Mean	8.298
Coefficient of Variation	1.208	Skewness	1.497
Mean of logged Data	2.093	SD of logged Data	1.384

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.55	95% Adjusted-CLT UCL (Chen-1995)	35.89
		95% Modified-t UCL (Johnson-1978)	34.39

Nonparametric Distribution Free UCLs

95% CLT UCL	30.47	95% Jackknife UCL	33.55
95% Standard Bootstrap UCL	29.17	95% Bootstrap-t UCL	51.96
95% Hall's Bootstrap UCL	88.43	95% Percentile Bootstrap UCL	31.1
95% BCA Bootstrap UCL	33.85		
90% Chebyshev(Mean, Sd) UCL	41.72	95% Chebyshev(Mean, Sd) UCL	52.99
97.5% Chebyshev(Mean, Sd) UCL	68.64	99% Chebyshev(Mean, Sd) UCL	99.39

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.095	Mean	16.86
Maximum	50.5	Median	9.85
SD	18.97	Std. Error of Mean	7.744
Coefficient of Variation	1.125	Skewness	1.339
Mean of logged Data	2.175	SD of logged Data	1.316

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	32.47	95% Adjusted-CLT UCL (Chen-1995)	34.12
		95% Modified-t UCL (Johnson-1978)	33.17

Nonparametric Distribution Free UCLs

95% CLT UCL	29.6	95% Jackknife UCL	32.47
95% Standard Bootstrap UCL	28.58	95% Bootstrap-t UCL	42.56
95% Hall's Bootstrap UCL	82.33	95% Percentile Bootstrap UCL	29.04
95% BCA Bootstrap UCL	30.87		
90% Chebyshev(Mean, Sd) UCL	40.09	95% Chebyshev(Mean, Sd) UCL	50.62
97.5% Chebyshev(Mean, Sd) UCL	65.22	99% Chebyshev(Mean, Sd) UCL	93.92

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.1	Mean	23.06
Maximum	64.8	Median	13.63
SD	24.46	Std. Error of Mean	9.988
Coefficient of Variation	1.061	Skewness	1.16
Mean of logged Data	2.567	SD of logged Data	1.22

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.18	95% Adjusted-CLT UCL (Chen-1995)	44.54
		95% Modified-t UCL (Johnson-1978)	43.97

Nonparametric Distribution Free UCLs

95% CLT UCL	39.49	95% Jackknife UCL	43.18
95% Standard Bootstrap UCL	37.95	95% Bootstrap-t UCL	56.38
95% Hall's Bootstrap UCL	74.87	95% Percentile Bootstrap UCL	38.71
95% BCA Bootstrap UCL	41.13		
90% Chebyshev(Mean, Sd) UCL	53.02	95% Chebyshev(Mean, Sd) UCL	66.59
97.5% Chebyshev(Mean, Sd) UCL	85.43	99% Chebyshev(Mean, Sd) UCL	122.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.26	Mean	10.07
Maximum	26.7	Median	6.708
SD	9.756	Std. Error of Mean	3.983
Coefficient of Variation	0.969	Skewness	1.137
Mean of logged Data	1.866	SD of logged Data	1.061

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.1	95% Adjusted-CLT UCL (Chen-1995)	18.6
		95% Modified-t UCL (Johnson-1978)	18.4

Nonparametric Distribution Free UCLs

95% CLT UCL	16.62	95% Jackknife UCL	18.1
95% Standard Bootstrap UCL	16.14	95% Bootstrap-t UCL	22.27
95% Hall's Bootstrap UCL	25.41	95% Percentile Bootstrap UCL	16.23
95% BCA Bootstrap UCL	17.29		
90% Chebyshev(Mean, Sd) UCL	22.02	95% Chebyshev(Mean, Sd) UCL	27.43
97.5% Chebyshev(Mean, Sd) UCL	34.94	99% Chebyshev(Mean, Sd) UCL	49.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.01	Mean	10.05
Maximum	28.8	Median	6.01
SD	10.62	Std. Error of Mean	4.334
Coefficient of Variation	1.056	Skewness	1.331
Mean of logged Data	1.79	SD of logged Data	1.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.79	95% Adjusted-CLT UCL (Chen-1995)	19.7
		95% Modified-t UCL (Johnson-1978)	19.18

Nonparametric Distribution Free UCLs

95% CLT UCL	17.18	95% Jackknife UCL	18.79
95% Standard Bootstrap UCL	16.37	95% Bootstrap-t UCL	25.7
95% Hall's Bootstrap UCL	47.69	95% Percentile Bootstrap UCL	16.84
95% BCA Bootstrap UCL	17.85		
90% Chebyshev(Mean, Sd) UCL	23.06	95% Chebyshev(Mean, Sd) UCL	28.95
97.5% Chebyshev(Mean, Sd) UCL	37.12	99% Chebyshev(Mean, Sd) UCL	53.18

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.89	Mean	16.64
Maximum	48.1	Median	9.65
SD	18.08	Std. Error of Mean	7.382
Coefficient of Variation	1.087	Skewness	1.255
Mean of logged Data	2.222	SD of logged Data	1.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.51	95% Adjusted-CLT UCL (Chen-1995)	32.82
		95% Modified-t UCL (Johnson-1978)	32.14

Nonparametric Distribution Free UCLs

95% CLT UCL	28.78	95% Jackknife UCL	31.51
95% Standard Bootstrap UCL	27.76	95% Bootstrap-t UCL	56.42
95% Hall's Bootstrap UCL	80.03	95% Percentile Bootstrap UCL	29.43
95% BCA Bootstrap UCL	29.82		
90% Chebyshev(Mean, Sd) UCL	38.78	95% Chebyshev(Mean, Sd) UCL	48.81
97.5% Chebyshev(Mean, Sd) UCL	62.73	99% Chebyshev(Mean, Sd) UCL	90.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.85	Mean	4.163

Maximum	8.09	Median	3.273
SD	1.982	Std. Error of Mean	0.809
Coefficient of Variation	0.476	Skewness	2.156
Mean of logged Data	1.355	SD of logged Data	0.384

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.794	95% Adjusted-CLT UCL (Chen-1995)	6.256
		95% Modified-t UCL (Johnson-1978)	5.913

Nonparametric Distribution Free UCLs

95% CLT UCL	5.495	95% Jackknife UCL	5.794
95% Standard Bootstrap UCL	5.379	95% Bootstrap-t UCL	14.16
95% Hall's Bootstrap UCL	15.69	95% Percentile Bootstrap UCL	5.654
95% BCA Bootstrap UCL	6.008		
90% Chebyshev(Mean, Sd) UCL	6.591	95% Chebyshev(Mean, Sd) UCL	7.691
97.5% Chebyshev(Mean, Sd) UCL	9.217	99% Chebyshev(Mean, Sd) UCL	12.22

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.63	Mean	38.75
Maximum	121	Median	19.56
SD	46.6	Std. Error of Mean	19.03
Coefficient of Variation	1.203	Skewness	1.35
Mean of logged Data	2.861	SD of logged Data	1.479

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	77.09	95% Adjusted-CLT UCL (Chen-1995)	81.25
		95% Modified-t UCL (Johnson-1978)	78.84

Nonparametric Distribution Free UCLs

95% CLT UCL	70.05	95% Jackknife UCL	77.09
95% Standard Bootstrap UCL	67.37	95% Bootstrap-t UCL	118
95% Hall's Bootstrap UCL	210	95% Percentile Bootstrap UCL	72.3
95% BCA Bootstrap UCL	77.22		

90% Chebyshev(Mean, Sd) UCL	95.83	95% Chebyshev(Mean, Sd) UCL	121.7
97.5% Chebyshev(Mean, Sd) UCL	157.6	99% Chebyshev(Mean, Sd) UCL	228.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.285	Mean	2.709
Maximum	9.74	Median	1.305
SD	3.444	Std. Error of Mean	1.406
Coefficient of Variation	1.271	Skewness	2.449
Mean of logged Data	0.6	SD of logged Data	0.821

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.543	95% Adjusted-CLT UCL (Chen-1995)	6.525
		95% Modified-t UCL (Johnson-1978)	5.777

Nonparametric Distribution Free UCLs

95% CLT UCL	5.022	95% Jackknife UCL	5.543
95% Standard Bootstrap UCL	4.784	95% Bootstrap-t UCL	399
95% Hall's Bootstrap UCL	275.9	95% Percentile Bootstrap UCL	5.515
95% BCA Bootstrap UCL	5.528		
90% Chebyshev(Mean, Sd) UCL	6.928	95% Chebyshev(Mean, Sd) UCL	8.839
97.5% Chebyshev(Mean, Sd) UCL	11.49	99% Chebyshev(Mean, Sd) UCL	16.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.839

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.28	Mean	12.75
Maximum	35.2	Median	7.86
SD	13.1	Std. Error of Mean	5.349
Coefficient of Variation	1.028	Skewness	1.177
Mean of logged Data	2.031	SD of logged Data	1.151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.53	95% Adjusted-CLT UCL (Chen-1995)	24.29
		95% Modified-t UCL (Johnson-1978)	23.96

Nonparametric Distribution Free UCLs

95% CLT UCL	21.55	95% Jackknife UCL	23.53
95% Standard Bootstrap UCL	20.57	95% Bootstrap-t UCL	30.61
95% Hall's Bootstrap UCL	54.18	95% Percentile Bootstrap UCL	21.33
95% BCA Bootstrap UCL	22.29		
90% Chebyshev(Mean, Sd) UCL	28.8	95% Chebyshev(Mean, Sd) UCL	36.06
97.5% Chebyshev(Mean, Sd) UCL	46.15	99% Chebyshev(Mean, Sd) UCL	65.97

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.965	Mean	1.969
Maximum	3.17	Median	1.955
SD	1.008	Std. Error of Mean	0.412
Coefficient of Variation	0.512	Skewness	0.0813
Mean of logged Data	0.555	SD of logged Data	0.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.799	95% Adjusted-CLT UCL (Chen-1995)	2.661
		95% Modified-t UCL (Johnson-1978)	2.801

Nonparametric Distribution Free UCLs

95% CLT UCL	2.646	95% Jackknife UCL	2.799
95% Standard Bootstrap UCL	2.579	95% Bootstrap-t UCL	2.911
95% Hall's Bootstrap UCL	2.339	95% Percentile Bootstrap UCL	2.593
95% BCA Bootstrap UCL	2.639		
90% Chebyshev(Mean, Sd) UCL	3.204	95% Chebyshev(Mean, Sd) UCL	3.763
97.5% Chebyshev(Mean, Sd) UCL	4.54	99% Chebyshev(Mean, Sd) UCL	6.065

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.22	Mean	31.95
Maximum	114	Median	12.17
SD	43.52	Std. Error of Mean	17.77
Coefficient of Variation	1.362	Skewness	1.775
Mean of logged Data	2.598	SD of logged Data	1.487

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	67.75	95% Adjusted-CLT UCL (Chen-1995)	74.93
		95% Modified-t UCL (Johnson-1978)	69.9

Nonparametric Distribution Free UCLs

95% CLT UCL	61.17	95% Jackknife UCL	67.75
95% Standard Bootstrap UCL	58.73	95% Bootstrap-t UCL	209.7
95% Hall's Bootstrap UCL	218.9	95% Percentile Bootstrap UCL	61.94
95% BCA Bootstrap UCL	73.14		
90% Chebyshev(Mean, Sd) UCL	85.25	95% Chebyshev(Mean, Sd) UCL	109.4
97.5% Chebyshev(Mean, Sd) UCL	142.9	99% Chebyshev(Mean, Sd) UCL	208.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.09	Mean	31.99
Maximum	100	Median	16.55
SD	38.32	Std. Error of Mean	15.65
Coefficient of Variation	1.198	Skewness	1.367
Mean of logged Data	2.68	SD of logged Data	1.468

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.52	95% Adjusted-CLT UCL (Chen-1995)	67.06
		95% Modified-t UCL (Johnson-1978)	64.98

Nonparametric Distribution Free UCLs

95% CLT UCL	57.73	95% Jackknife UCL	63.52
95% Standard Bootstrap UCL	55.1	95% Bootstrap-t UCL	93.05
95% Hall's Bootstrap UCL	170.4	95% Percentile Bootstrap UCL	59.5
95% BCA Bootstrap UCL	63.7		
90% Chebyshev(Mean, Sd) UCL	78.93	95% Chebyshev(Mean, Sd) UCL	100.2
97.5% Chebyshev(Mean, Sd) UCL	129.7	99% Chebyshev(Mean, Sd) UCL	187.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:26:04 PM
From File	38002F.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.2	Mean	12.3
Maximum	13.6	Median	12.1
SD	0.901	Std. Error of Mean	0.368
Coefficient of Variation	0.0733	Skewness	0.45
Mean of logged Data	2.507	SD of logged Data	0.0727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.04	95% Adjusted-CLT UCL (Chen-1995)	12.98
		95% Modified-t UCL (Johnson-1978)	13.05

Nonparametric Distribution Free UCLs

95% CLT UCL	12.91	95% Jackknife UCL	13.04
95% Standard Bootstrap UCL	12.86	95% Bootstrap-t UCL	13.55
95% Hall's Bootstrap UCL	13.64	95% Percentile Bootstrap UCL	12.87
95% BCA Bootstrap UCL	12.92		
90% Chebyshev(Mean, Sd) UCL	13.4	95% Chebyshev(Mean, Sd) UCL	13.9
97.5% Chebyshev(Mean, Sd) UCL	14.6	99% Chebyshev(Mean, Sd) UCL	15.96

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.5	Mean	12.3
Maximum	13.5	Median	12.2
SD	0.69	Std. Error of Mean	0.282
Coefficient of Variation	0.0561	Skewness	1.036
Mean of logged Data	2.508	SD of logged Data	0.0551

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.87	95% Adjusted-CLT UCL (Chen-1995)	12.89
		95% Modified-t UCL (Johnson-1978)	12.89

Nonparametric Distribution Free UCLs

95% CLT UCL	12.76	95% Jackknife UCL	12.87
95% Standard Bootstrap UCL	12.72	95% Bootstrap-t UCL	13.1
95% Hall's Bootstrap UCL	13.48	95% Percentile Bootstrap UCL	12.75
95% BCA Bootstrap UCL	12.82		
90% Chebyshev(Mean, Sd) UCL	13.14	95% Chebyshev(Mean, Sd) UCL	13.53
97.5% Chebyshev(Mean, Sd) UCL	14.06	99% Chebyshev(Mean, Sd) UCL	15.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.5	Mean	47.52
Maximum	50.4	Median	46.75
SD	2.268	Std. Error of Mean	0.926
Coefficient of Variation	0.0477	Skewness	0.538
Mean of logged Data	3.86	SD of logged Data	0.0474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.38	95% Adjusted-CLT UCL (Chen-1995)	49.26
		95% Modified-t UCL (Johnson-1978)	49.42

Nonparametric Distribution Free UCLs

95% CLT UCL	49.04	95% Jackknife UCL	49.38
95% Standard Bootstrap UCL	48.91	95% Bootstrap-t UCL	51.6
95% Hall's Bootstrap UCL	49.54	95% Percentile Bootstrap UCL	48.98
95% BCA Bootstrap UCL	49.03		
90% Chebyshev(Mean, Sd) UCL	50.29	95% Chebyshev(Mean, Sd) UCL	51.55
97.5% Chebyshev(Mean, Sd) UCL	53.3	99% Chebyshev(Mean, Sd) UCL	56.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.965	Mean	1.549
Maximum	2.28	Median	1.515
SD	0.572	Std. Error of Mean	0.234
Coefficient of Variation	0.369	Skewness	0.17
Mean of logged Data	0.378	SD of logged Data	0.38

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.02	95% Adjusted-CLT UCL (Chen-1995)	1.951
		95% Modified-t UCL (Johnson-1978)	2.023

Nonparametric Distribution Free UCLs

95% CLT UCL	1.934	95% Jackknife UCL	2.02
95% Standard Bootstrap UCL	1.899	95% Bootstrap-t UCL	2.089
95% Hall's Bootstrap UCL	1.778	95% Percentile Bootstrap UCL	1.897
95% BCA Bootstrap UCL	1.898		
90% Chebyshev(Mean, Sd) UCL	2.25	95% Chebyshev(Mean, Sd) UCL	2.568
97.5% Chebyshev(Mean, Sd) UCL	3.008	99% Chebyshev(Mean, Sd) UCL	3.874

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.505	Mean	0.527
Maximum	0.559	Median	0.525
SD	0.0186	Std. Error of Mean	0.00758
Coefficient of Variation	0.0352	Skewness	0.899
Mean of logged Data	-0.64	SD of logged Data	0.0349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.543	95% Adjusted-CLT UCL (Chen-1995)	0.543
		95% Modified-t UCL (Johnson-1978)	0.543

Nonparametric Distribution Free UCLs

95% CLT UCL	0.54	95% Jackknife UCL	0.543
95% Standard Bootstrap UCL	0.539	95% Bootstrap-t UCL	0.547
95% Hall's Bootstrap UCL	0.624	95% Percentile Bootstrap UCL	0.54
95% BCA Bootstrap UCL	0.54		
90% Chebyshev(Mean, Sd) UCL	0.55	95% Chebyshev(Mean, Sd) UCL	0.56
97.5% Chebyshev(Mean, Sd) UCL	0.575	99% Chebyshev(Mean, Sd) UCL	0.603

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	2.11
Maximum	2.165	Median	2.11
SD	0.0402	Std. Error of Mean	0.0164
Coefficient of Variation	0.0191	Skewness	1.858E-14
Mean of logged Data	0.747	SD of logged Data	0.0191

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.143	95% Adjusted-CLT UCL (Chen-1995)	2.137
		95% Modified-t UCL (Johnson-1978)	2.143

Nonparametric Distribution Free UCLs

95% CLT UCL	2.137	95% Jackknife UCL	2.143
95% Standard Bootstrap UCL	2.135	95% Bootstrap-t UCL	2.146
95% Hall's Bootstrap UCL	2.135	95% Percentile Bootstrap UCL	2.136
95% BCA Bootstrap UCL	2.135		
90% Chebyshev(Mean, Sd) UCL	2.159	95% Chebyshev(Mean, Sd) UCL	2.182
97.5% Chebyshev(Mean, Sd) UCL	2.213	99% Chebyshev(Mean, Sd) UCL	2.273

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.78	Mean	2.536
Maximum	3.87	Median	2.125
SD	0.83	Std. Error of Mean	0.339
Coefficient of Variation	0.327	Skewness	1.084
Mean of logged Data	0.89	SD of logged Data	0.305

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.219	95% Adjusted-CLT UCL (Chen-1995)	3.254
		95% Modified-t UCL (Johnson-1978)	3.244

Nonparametric Distribution Free UCLs

95% CLT UCL	3.093	95% Jackknife UCL	3.219
95% Standard Bootstrap UCL	3.045	95% Bootstrap-t UCL	5.449
95% Hall's Bootstrap UCL	9.043	95% Percentile Bootstrap UCL	3.098
95% BCA Bootstrap UCL	3.136		
90% Chebyshev(Mean, Sd) UCL	3.553	95% Chebyshev(Mean, Sd) UCL	4.014
97.5% Chebyshev(Mean, Sd) UCL	4.653	99% Chebyshev(Mean, Sd) UCL	5.909

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	2.11
Maximum	2.165	Median	2.11
SD	0.0402	Std. Error of Mean	0.0164
Coefficient of Variation	0.0191	Skewness	1.858E-14
Mean of logged Data	0.747	SD of logged Data	0.0191

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.143	95% Adjusted-CLT UCL (Chen-1995)	2.137
		95% Modified-t UCL (Johnson-1978)	2.143

Nonparametric Distribution Free UCLs

95% CLT UCL	2.137	95% Jackknife UCL	2.143
95% Standard Bootstrap UCL	2.135	95% Bootstrap-t UCL	2.144
95% Hall's Bootstrap UCL	2.135	95% Percentile Bootstrap UCL	2.135
95% BCA Bootstrap UCL	2.135		
90% Chebyshev(Mean, Sd) UCL	2.159	95% Chebyshev(Mean, Sd) UCL	2.182
97.5% Chebyshev(Mean, Sd) UCL	2.213	99% Chebyshev(Mean, Sd) UCL	2.273

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	4.129
Maximum	5.63	Median	3.578
SD	1.182	Std. Error of Mean	0.483
Coefficient of Variation	0.286	Skewness	0.814
Mean of logged Data	1.386	SD of logged Data	0.273

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.101	95% Adjusted-CLT UCL (Chen-1995)	5.094
		95% Modified-t UCL (Johnson-1978)	5.128

Nonparametric Distribution Free UCLs

95% CLT UCL	4.923	95% Jackknife UCL	5.101
95% Standard Bootstrap UCL	4.854	95% Bootstrap-t UCL	6.844
95% Hall's Bootstrap UCL	10.28	95% Percentile Bootstrap UCL	4.916
95% BCA Bootstrap UCL	4.943		
90% Chebyshev(Mean, Sd) UCL	5.577	95% Chebyshev(Mean, Sd) UCL	6.232
97.5% Chebyshev(Mean, Sd) UCL	7.143	99% Chebyshev(Mean, Sd) UCL	8.93

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.35	Mean	3.157
Maximum	3.6	Median	3.245
SD	0.424	Std. Error of Mean	0.173
Coefficient of Variation	0.134	Skewness	-1.695
Mean of logged Data	1.141	SD of logged Data	0.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.505	95% Adjusted-CLT UCL (Chen-1995)	3.313
		95% Modified-t UCL (Johnson-1978)	3.485

Nonparametric Distribution Free UCLs

95% CLT UCL	3.441	95% Jackknife UCL	3.505
95% Standard Bootstrap UCL	3.419	95% Bootstrap-t UCL	3.38
95% Hall's Bootstrap UCL	3.348	95% Percentile Bootstrap UCL	3.385
95% BCA Bootstrap UCL	3.358		
90% Chebyshev(Mean, Sd) UCL	3.676	95% Chebyshev(Mean, Sd) UCL	3.911
97.5% Chebyshev(Mean, Sd) UCL	4.237	99% Chebyshev(Mean, Sd) UCL	4.878

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	2.432
Maximum	3.99	Median	2.148
SD	0.765	Std. Error of Mean	0.312
Coefficient of Variation	0.314	Skewness	2.432
Mean of logged Data	0.857	SD of logged Data	0.259

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.061	95% Adjusted-CLT UCL (Chen-1995)	3.276

		95% Modified-t UCL (Johnson-1978)	3.112

Nonparametric Distribution Free UCLs

95% CLT UCL	2.945	95% Jackknife UCL	3.061
95% Standard Bootstrap UCL	2.909	95% Bootstrap-t UCL	9.642
95% Hall's Bootstrap UCL	9.582	95% Percentile Bootstrap UCL	3.04
95% BCA Bootstrap UCL	3.063		
90% Chebyshev(Mean, Sd) UCL	3.368	95% Chebyshev(Mean, Sd) UCL	3.792
97.5% Chebyshev(Mean, Sd) UCL	4.381	99% Chebyshev(Mean, Sd) UCL	5.538

Suggested UCL to Use

95% Student's-t UCL	3.061	or 95% Modified-t UCL	3.112

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	2.984
Maximum	4.81	Median	2.468
SD	1.166	Std. Error of Mean	0.476
Coefficient of Variation	0.391	Skewness	0.967
Mean of logged Data	1.035	SD of logged Data	0.367

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.943	95% Adjusted-CLT UCL (Chen-1995)	3.968
		95% Modified-t UCL (Johnson-1978)	3.975

Nonparametric Distribution Free UCLs

95% CLT UCL	3.767	95% Jackknife UCL	3.943
95% Standard Bootstrap UCL	3.681	95% Bootstrap-t UCL	5.212
95% Hall's Bootstrap UCL	7.504	95% Percentile Bootstrap UCL	3.753
95% BCA Bootstrap UCL	3.902		
90% Chebyshev(Mean, Sd) UCL	4.412	95% Chebyshev(Mean, Sd) UCL	5.059
97.5% Chebyshev(Mean, Sd) UCL	5.956	99% Chebyshev(Mean, Sd) UCL	7.72

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.99	Mean	3.2
Maximum	3.335	Median	3.213
SD	0.119	Std. Error of Mean	0.0487
Coefficient of Variation	0.0373	Skewness	-1.098
Mean of logged Data	1.163	SD of logged Data	0.0378

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.298	95% Adjusted-CLT UCL (Chen-1995)	3.257
		95% Modified-t UCL (Johnson-1978)	3.295

Nonparametric Distribution Free UCLs

95% CLT UCL	3.28	95% Jackknife UCL	3.298
95% Standard Bootstrap UCL	3.271	95% Bootstrap-t UCL	3.275
95% Hall's Bootstrap UCL	3.266	95% Percentile Bootstrap UCL	3.269
95% BCA Bootstrap UCL	3.258		
90% Chebyshev(Mean, Sd) UCL	3.346	95% Chebyshev(Mean, Sd) UCL	3.412
97.5% Chebyshev(Mean, Sd) UCL	3.504	99% Chebyshev(Mean, Sd) UCL	3.685

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	3.504
Maximum	6.99	Median	2.903
SD	1.919	Std. Error of Mean	0.784
Coefficient of Variation	0.548	Skewness	1.453
Mean of logged Data	1.145	SD of logged Data	0.494

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.083	95% Adjusted-CLT UCL (Chen-1995)	5.29
		95% Modified-t UCL (Johnson-1978)	5.161

Nonparametric Distribution Free UCLs

95% CLT UCL	4.793	95% Jackknife UCL	5.083
95% Standard Bootstrap UCL	4.695	95% Bootstrap-t UCL	6.989
95% Hall's Bootstrap UCL	9.485	95% Percentile Bootstrap UCL	4.805
95% BCA Bootstrap UCL	5.126		
90% Chebyshev(Mean, Sd) UCL	5.855	95% Chebyshev(Mean, Sd) UCL	6.92
97.5% Chebyshev(Mean, Sd) UCL	8.398	99% Chebyshev(Mean, Sd) UCL	11.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.265	Mean	1.299
Maximum	1.335	Median	1.298
SD	0.0254	Std. Error of Mean	0.0104
Coefficient of Variation	0.0195	Skewness	0.104
Mean of logged Data	0.262	SD of logged Data	0.0195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.32	95% Adjusted-CLT UCL (Chen-1995)	1.317
		95% Modified-t UCL (Johnson-1978)	1.32

Nonparametric Distribution Free UCLs

95% CLT UCL	1.316	95% Jackknife UCL	1.32
95% Standard Bootstrap UCL	1.315	95% Bootstrap-t UCL	1.321
95% Hall's Bootstrap UCL	1.315	95% Percentile Bootstrap UCL	1.315
95% BCA Bootstrap UCL	1.313		
90% Chebyshev(Mean, Sd) UCL	1.33	95% Chebyshev(Mean, Sd) UCL	1.344
97.5% Chebyshev(Mean, Sd) UCL	1.364	99% Chebyshev(Mean, Sd) UCL	1.402

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	3.165	Mean	3.458
Maximum	4.58	Median	3.245
SD	0.553	Std. Error of Mean	0.226
Coefficient of Variation	0.16	Skewness	2.374
Mean of logged Data	1.232	SD of logged Data	0.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.914	95% Adjusted-CLT UCL (Chen-1995)	4.064
		95% Modified-t UCL (Johnson-1978)	3.95

Nonparametric Distribution Free UCLs

95% CLT UCL	3.83	95% Jackknife UCL	3.914
95% Standard Bootstrap UCL	3.813	95% Bootstrap-t UCL	5.986
95% Hall's Bootstrap UCL	6.006	95% Percentile Bootstrap UCL	3.875
95% BCA Bootstrap UCL	3.949		
90% Chebyshev(Mean, Sd) UCL	4.136	95% Chebyshev(Mean, Sd) UCL	4.443
97.5% Chebyshev(Mean, Sd) UCL	4.869	99% Chebyshev(Mean, Sd) UCL	5.706

Suggested UCL to Use

95% Student's-t UCL	3.914	or 95% Modified-t UCL	3.95

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.76	Mean	2.832
Maximum	3.92	Median	2.795
SD	1.038	Std. Error of Mean	0.424
Coefficient of Variation	0.367	Skewness	0.0122
Mean of logged Data	0.981	SD of logged Data	0.382

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.686	95% Adjusted-CLT UCL (Chen-1995)	3.531
		95% Modified-t UCL (Johnson-1978)	3.686

Nonparametric Distribution Free UCLs

95% CLT UCL	3.529	95% Jackknife UCL	3.686
95% Standard Bootstrap UCL	3.475	95% Bootstrap-t UCL	3.739

95% Hall's Bootstrap UCL	3.185	95% Percentile Bootstrap UCL	3.487
95% BCA Bootstrap UCL	3.468		
90% Chebyshev(Mean, Sd) UCL	4.103	95% Chebyshev(Mean, Sd) UCL	4.679
97.5% Chebyshev(Mean, Sd) UCL	5.478	99% Chebyshev(Mean, Sd) UCL	7.048

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	3.34
Maximum	3.77	Median	3.283
SD	0.219	Std. Error of Mean	0.0895
Coefficient of Variation	0.0657	Skewness	2.029
Mean of logged Data	1.204	SD of logged Data	0.063

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.52	95% Adjusted-CLT UCL (Chen-1995)	3.566
		95% Modified-t UCL (Johnson-1978)	3.533

Nonparametric Distribution Free UCLs

95% CLT UCL	3.487	95% Jackknife UCL	3.52
95% Standard Bootstrap UCL	3.475	95% Bootstrap-t UCL	3.784
95% Hall's Bootstrap UCL	4.164	95% Percentile Bootstrap UCL	3.494
95% BCA Bootstrap UCL	3.536		
90% Chebyshev(Mean, Sd) UCL	3.609	95% Chebyshev(Mean, Sd) UCL	3.73
97.5% Chebyshev(Mean, Sd) UCL	3.899	99% Chebyshev(Mean, Sd) UCL	4.231

Suggested UCL to Use

95% Student's-t UCL	3.52	or 95% Modified-t UCL	3.533

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	3.821
Maximum	6.1	Median	3.348
SD	1.136	Std. Error of Mean	0.464

Coefficient of Variation	0.297	Skewness	2.272
Mean of logged Data	1.311	SD of logged Data	0.251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.756	95% Adjusted-CLT UCL (Chen-1995)	5.044
		95% Modified-t UCL (Johnson-1978)	4.827

Nonparametric Distribution Free UCLs

95% CLT UCL	4.584	95% Jackknife UCL	4.756
95% Standard Bootstrap UCL	4.511	95% Bootstrap-t UCL	11.23
95% Hall's Bootstrap UCL	8.987	95% Percentile Bootstrap UCL	4.668
95% BCA Bootstrap UCL	4.831		
90% Chebyshev(Mean, Sd) UCL	5.213	95% Chebyshev(Mean, Sd) UCL	5.843
97.5% Chebyshev(Mean, Sd) UCL	6.718	99% Chebyshev(Mean, Sd) UCL	8.437

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:30:15 PM
From File	38002G.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.8	Mean	12.67
Maximum	14.3	Median	12.45
SD	0.848	Std. Error of Mean	0.346
Coefficient of Variation	0.0669	Skewness	1.804
Mean of logged Data	2.537	SD of logged Data	0.0645

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.36	95% Adjusted-CLT UCL (Chen-1995)	13.51
		95% Modified-t UCL (Johnson-1978)	13.41

Nonparametric Distribution Free UCLs

95% CLT UCL	13.24	95% Jackknife UCL	13.36
95% Standard Bootstrap UCL	13.17	95% Bootstrap-t UCL	14.36
95% Hall's Bootstrap UCL	16.23	95% Percentile Bootstrap UCL	13.28
95% BCA Bootstrap UCL	13.38		
90% Chebyshev(Mean, Sd) UCL	13.7	95% Chebyshev(Mean, Sd) UCL	14.18
97.5% Chebyshev(Mean, Sd) UCL	14.83	99% Chebyshev(Mean, Sd) UCL	16.11

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.7	Mean	11.68
Maximum	13.7	Median	11.55
SD	1.067	Std. Error of Mean	0.435
Coefficient of Variation	0.0913	Skewness	1.672
Mean of logged Data	2.455	SD of logged Data	0.0873

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.56	95% Adjusted-CLT UCL (Chen-1995)	12.72
		95% Modified-t UCL (Johnson-1978)	12.61

Nonparametric Distribution Free UCLs

95% CLT UCL	12.4	95% Jackknife UCL	12.56
95% Standard Bootstrap UCL	12.33	95% Bootstrap-t UCL	13.22
95% Hall's Bootstrap UCL	15.65	95% Percentile Bootstrap UCL	12.37
95% BCA Bootstrap UCL	12.63		
90% Chebyshev(Mean, Sd) UCL	12.99	95% Chebyshev(Mean, Sd) UCL	13.58
97.5% Chebyshev(Mean, Sd) UCL	14.4	99% Chebyshev(Mean, Sd) UCL	16.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.9	Mean	48.68
Maximum	55	Median	48
SD	3.464	Std. Error of Mean	1.414
Coefficient of Variation	0.0711	Skewness	1.366
Mean of logged Data	3.883	SD of logged Data	0.0692

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.53	95% Adjusted-CLT UCL (Chen-1995)	51.85
		95% Modified-t UCL (Johnson-1978)	51.66

Nonparametric Distribution Free UCLs

95% CLT UCL	51.01	95% Jackknife UCL	51.53
95% Standard Bootstrap UCL	50.76	95% Bootstrap-t UCL	52.81
95% Hall's Bootstrap UCL	62.77	95% Percentile Bootstrap UCL	51.02
95% BCA Bootstrap UCL	51.35		
90% Chebyshev(Mean, Sd) UCL	52.93	95% Chebyshev(Mean, Sd) UCL	54.85
97.5% Chebyshev(Mean, Sd) UCL	57.51	99% Chebyshev(Mean, Sd) UCL	62.75

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.753	Mean	1.386
Maximum	2.25	Median	1.353
SD	0.594	Std. Error of Mean	0.243
Coefficient of Variation	0.429	Skewness	0.4
Mean of logged Data	0.247	SD of logged Data	0.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.875	95% Adjusted-CLT UCL (Chen-1995)	1.827
		95% Modified-t UCL (Johnson-1978)	1.881

Nonparametric Distribution Free UCLs

95% CLT UCL	1.785	95% Jackknife UCL	1.875
95% Standard Bootstrap UCL	1.755	95% Bootstrap-t UCL	1.993
95% Hall's Bootstrap UCL	1.68	95% Percentile Bootstrap UCL	1.755
95% BCA Bootstrap UCL	1.773		
90% Chebyshev(Mean, Sd) UCL	2.114	95% Chebyshev(Mean, Sd) UCL	2.443
97.5% Chebyshev(Mean, Sd) UCL	2.901	99% Chebyshev(Mean, Sd) UCL	3.799

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.477	Mean	0.515
Maximum	0.53	Median	0.523
SD	0.0211	Std. Error of Mean	0.0086
Coefficient of Variation	0.0409	Skewness	-1.363
Mean of logged Data	-0.665	SD of logged Data	0.0418

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.532	95% Adjusted-CLT UCL (Chen-1995)	0.524
		95% Modified-t UCL (Johnson-1978)	0.531

Nonparametric Distribution Free UCLs

95% CLT UCL	0.529	95% Jackknife UCL	0.532
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.54	95% Chebyshev(Mean, Sd) UCL	0.552
97.5% Chebyshev(Mean, Sd) UCL	0.568	99% Chebyshev(Mean, Sd) UCL	0.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.94	Mean	2.094
Maximum	2.16	Median	2.125
SD	0.085	Std. Error of Mean	0.0347
Coefficient of Variation	0.0406	Skewness	-1.475
Mean of logged Data	0.738	SD of logged Data	0.0415

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.164	95% Adjusted-CLT UCL (Chen-1995)	2.129
		95% Modified-t UCL (Johnson-1978)	2.161

Nonparametric Distribution Free UCLs

95% CLT UCL	2.151	95% Jackknife UCL	2.164
95% Standard Bootstrap UCL	2.146	95% Bootstrap-t UCL	2.145
95% Hall's Bootstrap UCL	2.132	95% Percentile Bootstrap UCL	2.141
95% BCA Bootstrap UCL	2.133		
90% Chebyshev(Mean, Sd) UCL	2.198	95% Chebyshev(Mean, Sd) UCL	2.245
97.5% Chebyshev(Mean, Sd) UCL	2.311	99% Chebyshev(Mean, Sd) UCL	2.439

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.94	Mean	2.094
Maximum	2.16	Median	2.125
SD	0.085	Std. Error of Mean	0.0347
Coefficient of Variation	0.0406	Skewness	-1.475
Mean of logged Data	0.738	SD of logged Data	0.0415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.164	95% Adjusted-CLT UCL (Chen-1995)	2.129
		95% Modified-t UCL (Johnson-1978)	2.161

Nonparametric Distribution Free UCLs

95% CLT UCL	2.151	95% Jackknife UCL	2.164
95% Standard Bootstrap UCL	2.147	95% Bootstrap-t UCL	2.145
95% Hall's Bootstrap UCL	2.133	95% Percentile Bootstrap UCL	2.142
95% BCA Bootstrap UCL	2.131		
90% Chebyshev(Mean, Sd) UCL	2.198	95% Chebyshev(Mean, Sd) UCL	2.245
97.5% Chebyshev(Mean, Sd) UCL	2.311	99% Chebyshev(Mean, Sd) UCL	2.439

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.94	Mean	2.094
Maximum	2.16	Median	2.125
SD	0.085	Std. Error of Mean	0.0347
Coefficient of Variation	0.0406	Skewness	-1.475
Mean of logged Data	0.738	SD of logged Data	0.0415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.164	95% Adjusted-CLT UCL (Chen-1995)	2.129
		95% Modified-t UCL (Johnson-1978)	2.161

Nonparametric Distribution Free UCLs

95% CLT UCL	2.151	95% Jackknife UCL	2.164
95% Standard Bootstrap UCL	2.146	95% Bootstrap-t UCL	2.144
95% Hall's Bootstrap UCL	2.131	95% Percentile Bootstrap UCL	2.14
95% BCA Bootstrap UCL	2.137		
90% Chebyshev(Mean, Sd) UCL	2.198	95% Chebyshev(Mean, Sd) UCL	2.245
97.5% Chebyshev(Mean, Sd) UCL	2.311	99% Chebyshev(Mean, Sd) UCL	2.439

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.5	Mean	3.017
Maximum	3.325	Median	3.2
SD	0.382	Std. Error of Mean	0.156
Coefficient of Variation	0.127	Skewness	-0.884
Mean of logged Data	1.097	SD of logged Data	0.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.331	95% Adjusted-CLT UCL (Chen-1995)	3.213
		95% Modified-t UCL (Johnson-1978)	3.321

Nonparametric Distribution Free UCLs

95% CLT UCL	3.273	95% Jackknife UCL	3.331
95% Standard Bootstrap UCL	3.256	95% Bootstrap-t UCL	3.273
95% Hall's Bootstrap UCL	3.171	95% Percentile Bootstrap UCL	3.264
95% BCA Bootstrap UCL	3.214		
90% Chebyshev(Mean, Sd) UCL	3.484	95% Chebyshev(Mean, Sd) UCL	3.696
97.5% Chebyshev(Mean, Sd) UCL	3.99	99% Chebyshev(Mean, Sd) UCL	4.567

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.98	Mean	3.221
Maximum	3.325	Median	3.268
SD	0.132	Std. Error of Mean	0.054
Coefficient of Variation	0.0411	Skewness	-1.496
Mean of logged Data	1.169	SD of logged Data	0.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.33	95% Adjusted-CLT UCL (Chen-1995)	3.274
		95% Modified-t UCL (Johnson-1978)	3.324

Nonparametric Distribution Free UCLs

95% CLT UCL	3.31	95% Jackknife UCL	3.33
95% Standard Bootstrap UCL	3.301	95% Bootstrap-t UCL	3.302
95% Hall's Bootstrap UCL	3.28	95% Percentile Bootstrap UCL	3.294
95% BCA Bootstrap UCL	3.286		
90% Chebyshev(Mean, Sd) UCL	3.383	95% Chebyshev(Mean, Sd) UCL	3.456
97.5% Chebyshev(Mean, Sd) UCL	3.558	99% Chebyshev(Mean, Sd) UCL	3.758

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.94	Mean	2.094

Maximum	2.16	Median	2.125
SD	0.085	Std. Error of Mean	0.0347
Coefficient of Variation	0.0406	Skewness	-1.475
Mean of logged Data	0.738	SD of logged Data	0.0415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.164	95% Adjusted-CLT UCL (Chen-1995)	2.129
		95% Modified-t UCL (Johnson-1978)	2.161

Nonparametric Distribution Free UCLs

95% CLT UCL	2.151	95% Jackknife UCL	2.164
95% Standard Bootstrap UCL	2.147	95% Bootstrap-t UCL	2.146
95% Hall's Bootstrap UCL	2.134	95% Percentile Bootstrap UCL	2.142
95% BCA Bootstrap UCL	2.133		
90% Chebyshev(Mean, Sd) UCL	2.198	95% Chebyshev(Mean, Sd) UCL	2.245
97.5% Chebyshev(Mean, Sd) UCL	2.311	99% Chebyshev(Mean, Sd) UCL	2.439

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.06	Mean	2.116
Maximum	2.16	Median	2.11
SD	0.0372	Std. Error of Mean	0.0152
Coefficient of Variation	0.0176	Skewness	-0.187
Mean of logged Data	0.749	SD of logged Data	0.0176

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.146	95% Adjusted-CLT UCL (Chen-1995)	2.14
		95% Modified-t UCL (Johnson-1978)	2.146

Nonparametric Distribution Free UCLs

95% CLT UCL	2.141	95% Jackknife UCL	2.146

95% Standard Bootstrap UCL	2.138	95% Bootstrap-t UCL	2.152
95% Hall's Bootstrap UCL	2.164	95% Percentile Bootstrap UCL	2.139
95% BCA Bootstrap UCL	2.134		
90% Chebyshev(Mean, Sd) UCL	2.161	95% Chebyshev(Mean, Sd) UCL	2.182
97.5% Chebyshev(Mean, Sd) UCL	2.211	99% Chebyshev(Mean, Sd) UCL	2.267

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.98	Mean	3.221
Maximum	3.325	Median	3.268
SD	0.132	Std. Error of Mean	0.054
Coefficient of Variation	0.0411	Skewness	-1.496
Mean of logged Data	1.169	SD of logged Data	0.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.33	95% Adjusted-CLT UCL (Chen-1995)	3.274
		95% Modified-t UCL (Johnson-1978)	3.324

Nonparametric Distribution Free UCLs

95% CLT UCL	3.31	95% Jackknife UCL	3.33
95% Standard Bootstrap UCL	3.301	95% Bootstrap-t UCL	3.299
95% Hall's Bootstrap UCL	3.278	95% Percentile Bootstrap UCL	3.294
95% BCA Bootstrap UCL	3.278		
90% Chebyshev(Mean, Sd) UCL	3.383	95% Chebyshev(Mean, Sd) UCL	3.456
97.5% Chebyshev(Mean, Sd) UCL	3.558	99% Chebyshev(Mean, Sd) UCL	3.758

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.06	Mean	2.666
Maximum	3.69	Median	2.39
SD	0.686	Std. Error of Mean	0.28
Coefficient of Variation	0.257	Skewness	0.797
Mean of logged Data	0.954	SD of logged Data	0.247

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.23	95% Adjusted-CLT UCL (Chen-1995)	3.224
		95% Modified-t UCL (Johnson-1978)	3.245

Nonparametric Distribution Free UCLs

95% CLT UCL	3.126	95% Jackknife UCL	3.23
95% Standard Bootstrap UCL	3.079	95% Bootstrap-t UCL	3.682
95% Hall's Bootstrap UCL	3.597	95% Percentile Bootstrap UCL	3.113
95% BCA Bootstrap UCL	3.177		
90% Chebyshev(Mean, Sd) UCL	3.505	95% Chebyshev(Mean, Sd) UCL	3.886
97.5% Chebyshev(Mean, Sd) UCL	4.414	99% Chebyshev(Mean, Sd) UCL	5.451

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.195	Mean	1.288
Maximum	1.33	Median	1.305
SD	0.0513	Std. Error of Mean	0.0209
Coefficient of Variation	0.0398	Skewness	-1.484
Mean of logged Data	0.253	SD of logged Data	0.0406

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.33	95% Adjusted-CLT UCL (Chen-1995)	1.309
		95% Modified-t UCL (Johnson-1978)	1.328

Nonparametric Distribution Free UCLs

95% CLT UCL	1.323	95% Jackknife UCL	1.33
95% Standard Bootstrap UCL	1.32	95% Bootstrap-t UCL	1.318
95% Hall's Bootstrap UCL	1.311	95% Percentile Bootstrap UCL	1.317
95% BCA Bootstrap UCL	1.314		
90% Chebyshev(Mean, Sd) UCL	1.351	95% Chebyshev(Mean, Sd) UCL	1.38
97.5% Chebyshev(Mean, Sd) UCL	1.419	99% Chebyshev(Mean, Sd) UCL	1.497

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.98	Mean	3.221
Maximum	3.325	Median	3.268
SD	0.132	Std. Error of Mean	0.054
Coefficient of Variation	0.0411	Skewness	-1.496
Mean of logged Data	1.169	SD of logged Data	0.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.33	95% Adjusted-CLT UCL (Chen-1995)	3.274
		95% Modified-t UCL (Johnson-1978)	3.324

Nonparametric Distribution Free UCLs

95% CLT UCL	3.31	95% Jackknife UCL	3.33
95% Standard Bootstrap UCL	3.302	95% Bootstrap-t UCL	3.299
95% Hall's Bootstrap UCL	3.279	95% Percentile Bootstrap UCL	3.293
95% BCA Bootstrap UCL	3.288		
90% Chebyshev(Mean, Sd) UCL	3.383	95% Chebyshev(Mean, Sd) UCL	3.456
97.5% Chebyshev(Mean, Sd) UCL	3.558	99% Chebyshev(Mean, Sd) UCL	3.758

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.824	Mean	1.902
Maximum	2.75	Median	2.02
SD	0.908	Std. Error of Mean	0.371
Coefficient of Variation	0.477	Skewness	-0.137
Mean of logged Data	0.531	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.65	95% Adjusted-CLT UCL (Chen-1995)	2.49
		95% Modified-t UCL (Johnson-1978)	2.646

Nonparametric Distribution Free UCLs

95% CLT UCL	2.512	95% Jackknife UCL	2.65
95% Standard Bootstrap UCL	2.459	95% Bootstrap-t UCL	2.647
95% Hall's Bootstrap UCL	2.242	95% Percentile Bootstrap UCL	2.45
95% BCA Bootstrap UCL	2.455		
90% Chebyshev(Mean, Sd) UCL	3.015	95% Chebyshev(Mean, Sd) UCL	3.519
97.5% Chebyshev(Mean, Sd) UCL	4.218	99% Chebyshev(Mean, Sd) UCL	5.592

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.91	Mean	3.222
Maximum	3.38	Median	3.273
SD	0.17	Std. Error of Mean	0.0694
Coefficient of Variation	0.0527	Skewness	-1.5
Mean of logged Data	1.169	SD of logged Data	0.0543

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.361	95% Adjusted-CLT UCL (Chen-1995)	3.29
		95% Modified-t UCL (Johnson-1978)	3.354

Nonparametric Distribution Free UCLs

95% CLT UCL	3.336	95% Jackknife UCL	3.361
95% Standard Bootstrap UCL	3.326	95% Bootstrap-t UCL	3.323
95% Hall's Bootstrap UCL	3.298	95% Percentile Bootstrap UCL	3.315
95% BCA Bootstrap UCL	3.3		
90% Chebyshev(Mean, Sd) UCL	3.43	95% Chebyshev(Mean, Sd) UCL	3.524
97.5% Chebyshev(Mean, Sd) UCL	3.655	99% Chebyshev(Mean, Sd) UCL	3.912

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.31	Mean	3.037
Maximum	3.325	Median	3.19
SD	0.389	Std. Error of Mean	0.159
Coefficient of Variation	0.128	Skewness	-1.696
Mean of logged Data	1.103	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.357	95% Adjusted-CLT UCL (Chen-1995)	3.18
		95% Modified-t UCL (Johnson-1978)	3.339

Nonparametric Distribution Free UCLs

95% CLT UCL	3.298	95% Jackknife UCL	3.357
95% Standard Bootstrap UCL	3.273	95% Bootstrap-t UCL	3.259
95% Hall's Bootstrap UCL	3.2	95% Percentile Bootstrap UCL	3.253
95% BCA Bootstrap UCL	3.208		
90% Chebyshev(Mean, Sd) UCL	3.514	95% Chebyshev(Mean, Sd) UCL	3.73
97.5% Chebyshev(Mean, Sd) UCL	4.029	99% Chebyshev(Mean, Sd) UCL	4.618

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:31:27 PM
From File	38002H.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.9	Mean	11.77
Maximum	12.3	Median	11.85
SD	0.472	Std. Error of Mean	0.193
Coefficient of Variation	0.0401	Skewness	-1.383
Mean of logged Data	2.465	SD of logged Data	0.0409

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.15	95% Adjusted-CLT UCL (Chen-1995)	11.97
		95% Modified-t UCL (Johnson-1978)	12.14

Nonparametric Distribution Free UCLs

95% CLT UCL	12.08	95% Jackknife UCL	12.15
95% Standard Bootstrap UCL	12.05	95% Bootstrap-t UCL	12.06
95% Hall's Bootstrap UCL	11.99	95% Percentile Bootstrap UCL	12.03
95% BCA Bootstrap UCL	11.98		
90% Chebyshev(Mean, Sd) UCL	12.34	95% Chebyshev(Mean, Sd) UCL	12.61
97.5% Chebyshev(Mean, Sd) UCL	12.97	99% Chebyshev(Mean, Sd) UCL	13.68

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	9.97	Mean	11.48
Maximum	13.7	Median	11.35
SD	1.216	Std. Error of Mean	0.497
Coefficient of Variation	0.106	Skewness	1.246

Mean of logged Data	2.436	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.48	95% Adjusted-CLT UCL (Chen-1995)	12.56
		95% Modified-t UCL (Johnson-1978)	12.52

Nonparametric Distribution Free UCLs

95% CLT UCL	12.3	95% Jackknife UCL	12.48
95% Standard Bootstrap UCL	12.22	95% Bootstrap-t UCL	13.16
95% Hall's Bootstrap UCL	17.8	95% Percentile Bootstrap UCL	12.25
95% BCA Bootstrap UCL	12.45		
90% Chebyshev(Mean, Sd) UCL	12.97	95% Chebyshev(Mean, Sd) UCL	13.64
97.5% Chebyshev(Mean, Sd) UCL	14.58	99% Chebyshev(Mean, Sd) UCL	16.42

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	42.2	Mean	46.12
Maximum	48.1	Median	46.45
SD	2.082	Std. Error of Mean	0.85
Coefficient of Variation	0.0451	Skewness	-1.64
Mean of logged Data	3.83	SD of logged Data	0.0464

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.83	95% Adjusted-CLT UCL (Chen-1995)	46.91
		95% Modified-t UCL (Johnson-1978)	47.73

Nonparametric Distribution Free UCLs

95% CLT UCL	47.51	95% Jackknife UCL	47.83
95% Standard Bootstrap UCL	47.4	95% Bootstrap-t UCL	47.32
95% Hall's Bootstrap UCL	47.06	95% Percentile Bootstrap UCL	47.25
95% BCA Bootstrap UCL	47.12		
90% Chebyshev(Mean, Sd) UCL	48.67	95% Chebyshev(Mean, Sd) UCL	49.82
97.5% Chebyshev(Mean, Sd) UCL	51.42	99% Chebyshev(Mean, Sd) UCL	54.57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.719	Mean	0.84
Maximum	0.915	Median	0.882
SD	0.0802	Std. Error of Mean	0.0327
Coefficient of Variation	0.0954	Skewness	-0.964
Mean of logged Data	-0.178	SD of logged Data	0.0988

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.906	95% Adjusted-CLT UCL (Chen-1995)	0.88
		95% Modified-t UCL (Johnson-1978)	0.904

Nonparametric Distribution Free UCLs

95% CLT UCL	0.894	95% Jackknife UCL	0.906
95% Standard Bootstrap UCL	0.89	95% Bootstrap-t UCL	0.894
95% Hall's Bootstrap UCL	0.874	95% Percentile Bootstrap UCL	0.889
95% BCA Bootstrap UCL	0.883		
90% Chebyshev(Mean, Sd) UCL	0.939	95% Chebyshev(Mean, Sd) UCL	0.983
97.5% Chebyshev(Mean, Sd) UCL	1.045	99% Chebyshev(Mean, Sd) UCL	1.166

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.473	Mean	0.494
Maximum	0.53	Median	0.483

SD	0.0264	Std. Error of Mean	0.0108
Coefficient of Variation	0.0534	Skewness	0.768
Mean of logged Data	-0.706	SD of logged Data	0.0528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.516	95% Adjusted-CLT UCL (Chen-1995)	0.516
		95% Modified-t UCL (Johnson-1978)	0.517

Nonparametric Distribution Free UCLs

95% CLT UCL	0.512	95% Jackknife UCL	0.516
95% Standard Bootstrap UCL	0.51	95% Bootstrap-t UCL	0.544
95% Hall's Bootstrap UCL	0.541	95% Percentile Bootstrap UCL	0.512
95% BCA Bootstrap UCL	0.514		
90% Chebyshev(Mean, Sd) UCL	0.527	95% Chebyshev(Mean, Sd) UCL	0.541
97.5% Chebyshev(Mean, Sd) UCL	0.562	99% Chebyshev(Mean, Sd) UCL	0.602

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.92	Mean	2.008
Maximum	2.15	Median	1.965
SD	0.105	Std. Error of Mean	0.043
Coefficient of Variation	0.0525	Skewness	0.755
Mean of logged Data	0.696	SD of logged Data	0.0518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.095	95% Adjusted-CLT UCL (Chen-1995)	2.093
		95% Modified-t UCL (Johnson-1978)	2.097

Nonparametric Distribution Free UCLs

95% CLT UCL	2.079	95% Jackknife UCL	2.095
95% Standard Bootstrap UCL	2.074	95% Bootstrap-t UCL	2.198
95% Hall's Bootstrap UCL	2.192	95% Percentile Bootstrap UCL	2.078
95% BCA Bootstrap UCL	2.082		
90% Chebyshev(Mean, Sd) UCL	2.137	95% Chebyshev(Mean, Sd) UCL	2.196

97.5% Chebyshev(Mean, Sd) UCL	2.277	99% Chebyshev(Mean, Sd) UCL	2.436

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.92	Mean	2.097
Maximum	2.66	Median	1.965
SD	0.289	Std. Error of Mean	0.118
Coefficient of Variation	0.138	Skewness	2.017
Mean of logged Data	0.733	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.335	95% Adjusted-CLT UCL (Chen-1995)	2.395
		95% Modified-t UCL (Johnson-1978)	2.351

Nonparametric Distribution Free UCLs

95% CLT UCL	2.291	95% Jackknife UCL	2.335
95% Standard Bootstrap UCL	2.272	95% Bootstrap-t UCL	3.665
95% Hall's Bootstrap UCL	3.642	95% Percentile Bootstrap UCL	2.285
95% BCA Bootstrap UCL	2.343		
90% Chebyshev(Mean, Sd) UCL	2.451	95% Chebyshev(Mean, Sd) UCL	2.612
97.5% Chebyshev(Mean, Sd) UCL	2.834	99% Chebyshev(Mean, Sd) UCL	3.272

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.92	Mean	2.008
Maximum	2.15	Median	1.965
SD	0.105	Std. Error of Mean	0.043
Coefficient of Variation	0.0525	Skewness	0.755
Mean of logged Data	0.696	SD of logged Data	0.0518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.095	95% Adjusted-CLT UCL (Chen-1995)	2.093
		95% Modified-t UCL (Johnson-1978)	2.097

Nonparametric Distribution Free UCLs

95% CLT UCL	2.079	95% Jackknife UCL	2.095
95% Standard Bootstrap UCL	2.07	95% Bootstrap-t UCL	2.199
95% Hall's Bootstrap UCL	2.179	95% Percentile Bootstrap UCL	2.075
95% BCA Bootstrap UCL	2.078		
90% Chebyshev(Mean, Sd) UCL	2.137	95% Chebyshev(Mean, Sd) UCL	2.196
97.5% Chebyshev(Mean, Sd) UCL	2.277	99% Chebyshev(Mean, Sd) UCL	2.436

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.56	Mean	3.183
Maximum	4.73	Median	2.953
SD	0.777	Std. Error of Mean	0.317
Coefficient of Variation	0.244	Skewness	2.171
Mean of logged Data	1.137	SD of logged Data	0.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.822	95% Adjusted-CLT UCL (Chen-1995)	4.005
		95% Modified-t UCL (Johnson-1978)	3.869

Nonparametric Distribution Free UCLs

95% CLT UCL	3.704	95% Jackknife UCL	3.822
95% Standard Bootstrap UCL	3.653	95% Bootstrap-t UCL	5.521
95% Hall's Bootstrap UCL	6.73	95% Percentile Bootstrap UCL	3.777
95% BCA Bootstrap UCL	3.86		
90% Chebyshev(Mean, Sd) UCL	4.134	95% Chebyshev(Mean, Sd) UCL	4.566
97.5% Chebyshev(Mean, Sd) UCL	5.164	99% Chebyshev(Mean, Sd) UCL	6.34

Suggested UCL to Use

95% Student's-t UCL	3.822	or 95% Modified-t UCL	3.869

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.78	Mean	3.006
Maximum	3.31	Median	2.968
SD	0.175	Std. Error of Mean	0.0714
Coefficient of Variation	0.0582	Skewness	0.924
Mean of logged Data	1.099	SD of logged Data	0.0573

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.15	95% Adjusted-CLT UCL (Chen-1995)	3.152
		95% Modified-t UCL (Johnson-1978)	3.154

Nonparametric Distribution Free UCLs

95% CLT UCL	3.123	95% Jackknife UCL	3.15
95% Standard Bootstrap UCL	3.112	95% Bootstrap-t UCL	3.19
95% Hall's Bootstrap UCL	4.022	95% Percentile Bootstrap UCL	3.112
95% BCA Bootstrap UCL	3.137		
90% Chebyshev(Mean, Sd) UCL	3.22	95% Chebyshev(Mean, Sd) UCL	3.317
97.5% Chebyshev(Mean, Sd) UCL	3.452	99% Chebyshev(Mean, Sd) UCL	3.716

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.92	Mean	2.122
Maximum	2.81	Median	1.965
SD	0.348	Std. Error of Mean	0.142
Coefficient of Variation	0.164	Skewness	2.142
Mean of logged Data	0.742	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.408	95% Adjusted-CLT UCL (Chen-1995)	2.488
		95% Modified-t UCL (Johnson-1978)	2.429

Nonparametric Distribution Free UCLs

95% CLT UCL	2.355	95% Jackknife UCL	2.408
95% Standard Bootstrap UCL	2.338	95% Bootstrap-t UCL	4.434
95% Hall's Bootstrap UCL	3.714	95% Percentile Bootstrap UCL	2.372
95% BCA Bootstrap UCL	2.442		
90% Chebyshev(Mean, Sd) UCL	2.548	95% Chebyshev(Mean, Sd) UCL	2.741
97.5% Chebyshev(Mean, Sd) UCL	3.009	99% Chebyshev(Mean, Sd) UCL	3.536

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.92	Mean	2.342
Maximum	3.87	Median	2.07
SD	0.758	Std. Error of Mean	0.309
Coefficient of Variation	0.324	Skewness	2.32
Mean of logged Data	0.817	SD of logged Data	0.269

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.965	95% Adjusted-CLT UCL (Chen-1995)	3.164
		95% Modified-t UCL (Johnson-1978)	3.014

Nonparametric Distribution Free UCLs

95% CLT UCL	2.851	95% Jackknife UCL	2.965
95% Standard Bootstrap UCL	2.813	95% Bootstrap-t UCL	4.828
95% Hall's Bootstrap UCL	5.256	95% Percentile Bootstrap UCL	2.933
95% BCA Bootstrap UCL	2.992		
90% Chebyshev(Mean, Sd) UCL	3.27	95% Chebyshev(Mean, Sd) UCL	3.69
97.5% Chebyshev(Mean, Sd) UCL	4.274	99% Chebyshev(Mean, Sd) UCL	5.42

Suggested UCL to Use

95% Student's-t UCL	2.965	or 95% Modified-t UCL	3.014

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.95	Mean	3.089
Maximum	3.31	Median	3.02
SD	0.165	Std. Error of Mean	0.0672
Coefficient of Variation	0.0533	Skewness	0.76
Mean of logged Data	1.127	SD of logged Data	0.0526

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.225	95% Adjusted-CLT UCL (Chen-1995)	3.222
		95% Modified-t UCL (Johnson-1978)	3.228

Nonparametric Distribution Free UCLs

95% CLT UCL	3.2	95% Jackknife UCL	3.225
95% Standard Bootstrap UCL	3.188	95% Bootstrap-t UCL	3.398
95% Hall's Bootstrap UCL	3.36	95% Percentile Bootstrap UCL	3.198
95% BCA Bootstrap UCL	3.203		
90% Chebyshev(Mean, Sd) UCL	3.291	95% Chebyshev(Mean, Sd) UCL	3.382
97.5% Chebyshev(Mean, Sd) UCL	3.509	99% Chebyshev(Mean, Sd) UCL	3.757

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.92	Mean	2.615
Maximum	4.35	Median	2.22
SD	0.958	Std. Error of Mean	0.391
Coefficient of Variation	0.366	Skewness	1.497
Mean of logged Data	0.913	SD of logged Data	0.328

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.403	95% Adjusted-CLT UCL (Chen-1995)	3.514
		95% Modified-t UCL (Johnson-1978)	3.443

Nonparametric Distribution Free UCLs

95% CLT UCL	3.259	95% Jackknife UCL	3.403
95% Standard Bootstrap UCL	3.207	95% Bootstrap-t UCL	4.457
95% Hall's Bootstrap UCL	6.242	95% Percentile Bootstrap UCL	3.3
95% BCA Bootstrap UCL	3.348		
90% Chebyshev(Mean, Sd) UCL	3.789	95% Chebyshev(Mean, Sd) UCL	4.32
97.5% Chebyshev(Mean, Sd) UCL	5.058	99% Chebyshev(Mean, Sd) UCL	6.508

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.18	Mean	1.237
Maximum	1.325	Median	1.21
SD	0.0667	Std. Error of Mean	0.0272
Coefficient of Variation	0.0539	Skewness	0.741
Mean of logged Data	0.211	SD of logged Data	0.0533

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.292	95% Adjusted-CLT UCL (Chen-1995)	1.29
		95% Modified-t UCL (Johnson-1978)	1.293

Nonparametric Distribution Free UCLs

95% CLT UCL	1.281	95% Jackknife UCL	1.292
95% Standard Bootstrap UCL	1.278	95% Bootstrap-t UCL	1.356
95% Hall's Bootstrap UCL	1.341	95% Percentile Bootstrap UCL	1.281
95% BCA Bootstrap UCL	1.282		
90% Chebyshev(Mean, Sd) UCL	1.318	95% Chebyshev(Mean, Sd) UCL	1.355
97.5% Chebyshev(Mean, Sd) UCL	1.407	99% Chebyshev(Mean, Sd) UCL	1.508

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.95	Mean	3.071
Maximum	3.31	Median	3.02
SD	0.144	Std. Error of Mean	0.0587
Coefficient of Variation	0.0468	Skewness	1.068
Mean of logged Data	1.121	SD of logged Data	0.0461

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.189	95% Adjusted-CLT UCL (Chen-1995)	3.195
		95% Modified-t UCL (Johnson-1978)	3.193

Nonparametric Distribution Free UCLs

95% CLT UCL	3.167	95% Jackknife UCL	3.189
95% Standard Bootstrap UCL	3.16	95% Bootstrap-t UCL	3.383
95% Hall's Bootstrap UCL	3.615	95% Percentile Bootstrap UCL	3.163
95% BCA Bootstrap UCL	3.185		
90% Chebyshev(Mean, Sd) UCL	3.247	95% Chebyshev(Mean, Sd) UCL	3.327
97.5% Chebyshev(Mean, Sd) UCL	3.438	99% Chebyshev(Mean, Sd) UCL	3.655

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.741	Mean	1.519
Maximum	2.41	Median	1.443
SD	0.76	Std. Error of Mean	0.31
Coefficient of Variation	0.5	Skewness	0.0989
Mean of logged Data	0.302	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.143	95% Adjusted-CLT UCL (Chen-1995)	2.042
		95% Modified-t UCL (Johnson-1978)	2.145

Nonparametric Distribution Free UCLs

95% CLT UCL	2.029	95% Jackknife UCL	2.143
95% Standard Bootstrap UCL	1.98	95% Bootstrap-t UCL	2.147
95% Hall's Bootstrap UCL	1.797	95% Percentile Bootstrap UCL	1.983
95% BCA Bootstrap UCL	1.983		
90% Chebyshev(Mean, Sd) UCL	2.449	95% Chebyshev(Mean, Sd) UCL	2.87
97.5% Chebyshev(Mean, Sd) UCL	3.455	99% Chebyshev(Mean, Sd) UCL	4.604

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.26	Mean	2.919
Maximum	3.31	Median	2.968
SD	0.35	Std. Error of Mean	0.143
Coefficient of Variation	0.12	Skewness	-1.563
Mean of logged Data	1.065	SD of logged Data	0.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.207	95% Adjusted-CLT UCL (Chen-1995)	3.057
		95% Modified-t UCL (Johnson-1978)	3.192

Nonparametric Distribution Free UCLs

95% CLT UCL	3.154	95% Jackknife UCL	3.207
95% Standard Bootstrap UCL	3.133	95% Bootstrap-t UCL	3.106
95% Hall's Bootstrap UCL	3.084	95% Percentile Bootstrap UCL	3.112
95% BCA Bootstrap UCL	3.08		
90% Chebyshev(Mean, Sd) UCL	3.348	95% Chebyshev(Mean, Sd) UCL	3.542
97.5% Chebyshev(Mean, Sd) UCL	3.812	99% Chebyshev(Mean, Sd) UCL	4.341

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.24	Mean	2.943
Maximum	3.8	Median	2.953
SD	0.515	Std. Error of Mean	0.21
Coefficient of Variation	0.175	Skewness	0.571
Mean of logged Data	1.067	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.367	95% Adjusted-CLT UCL (Chen-1995)	3.341
		95% Modified-t UCL (Johnson-1978)	3.375

Nonparametric Distribution Free UCLs

95% CLT UCL	3.289	95% Jackknife UCL	3.367
95% Standard Bootstrap UCL	3.254	95% Bootstrap-t UCL	3.453
95% Hall's Bootstrap UCL	3.571	95% Percentile Bootstrap UCL	3.272
95% BCA Bootstrap UCL	3.271		
90% Chebyshev(Mean, Sd) UCL	3.574	95% Chebyshev(Mean, Sd) UCL	3.86
97.5% Chebyshev(Mean, Sd) UCL	4.257	99% Chebyshev(Mean, Sd) UCL	5.036

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:32:47 PM
From File	38002I.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.6	Mean	15.08
Maximum	17.6	Median	14.95
SD	2.316	Std. Error of Mean	0.946
Coefficient of Variation	0.154	Skewness	0.037
Mean of logged Data	2.704	SD of logged Data	0.154

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.99	95% Adjusted-CLT UCL (Chen-1995)	16.65
		95% Modified-t UCL (Johnson-1978)	16.99

Nonparametric Distribution Free UCLs

95% CLT UCL	16.64	95% Jackknife UCL	16.99
95% Standard Bootstrap UCL	16.51	95% Bootstrap-t UCL	17.27
95% Hall's Bootstrap UCL	15.95	95% Percentile Bootstrap UCL	16.5
95% BCA Bootstrap UCL	16.57		
90% Chebyshev(Mean, Sd) UCL	17.92	95% Chebyshev(Mean, Sd) UCL	19.21
97.5% Chebyshev(Mean, Sd) UCL	20.99	99% Chebyshev(Mean, Sd) UCL	24.49

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14	Mean	29.88
Maximum	65.3	Median	16.55
SD	22.83	Std. Error of Mean	9.321
Coefficient of Variation	0.764	Skewness	1.095
Mean of logged Data	3.177	SD of logged Data	0.698

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.66	95% Adjusted-CLT UCL (Chen-1995)	49.67
		95% Modified-t UCL (Johnson-1978)	49.36

Nonparametric Distribution Free UCLs

95% CLT UCL	45.21	95% Jackknife UCL	48.66
95% Standard Bootstrap UCL	44.17	95% Bootstrap-t UCL	291.6
95% Hall's Bootstrap UCL	295.3	95% Percentile Bootstrap UCL	44.4
95% BCA Bootstrap UCL	46.9		
90% Chebyshev(Mean, Sd) UCL	57.85	95% Chebyshev(Mean, Sd) UCL	70.51
97.5% Chebyshev(Mean, Sd) UCL	88.09	99% Chebyshev(Mean, Sd) UCL	122.6

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	70.51

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.7	Mean	52.48
Maximum	58.4	Median	52.3
SD	5.31	Std. Error of Mean	2.168
Coefficient of Variation	0.101	Skewness	-0.0711
Mean of logged Data	3.956	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.85	95% Adjusted-CLT UCL (Chen-1995)	55.98
		95% Modified-t UCL (Johnson-1978)	56.84

Nonparametric Distribution Free UCLs

95% CLT UCL	56.05	95% Jackknife UCL	56.85
95% Standard Bootstrap UCL	55.71	95% Bootstrap-t UCL	56.7
95% Hall's Bootstrap UCL	55.19	95% Percentile Bootstrap UCL	55.72
95% BCA Bootstrap UCL	55.72		
90% Chebyshev(Mean, Sd) UCL	58.99	95% Chebyshev(Mean, Sd) UCL	61.93
97.5% Chebyshev(Mean, Sd) UCL	66.02	99% Chebyshev(Mean, Sd) UCL	74.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.941	Mean	1.229
Maximum	1.57	Median	1.215
SD	0.25	Std. Error of Mean	0.102
Coefficient of Variation	0.204	Skewness	0.221
Mean of logged Data	0.188	SD of logged Data	0.204

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.434	95% Adjusted-CLT UCL (Chen-1995)	1.406
		95% Modified-t UCL (Johnson-1978)	1.436

Nonparametric Distribution Free UCLs

95% CLT UCL	1.396	95% Jackknife UCL	1.434
95% Standard Bootstrap UCL	1.383	95% Bootstrap-t UCL	1.479
95% Hall's Bootstrap UCL	1.35	95% Percentile Bootstrap UCL	1.388
95% BCA Bootstrap UCL	1.388		
90% Chebyshev(Mean, Sd) UCL	1.535	95% Chebyshev(Mean, Sd) UCL	1.673
97.5% Chebyshev(Mean, Sd) UCL	1.866	99% Chebyshev(Mean, Sd) UCL	2.244

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.424	Mean	0.531
Maximum	0.705	Median	0.516
SD	0.0931	Std. Error of Mean	0.038
Coefficient of Variation	0.175	Skewness	1.507
Mean of logged Data	-0.646	SD of logged Data	0.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.607	95% Adjusted-CLT UCL (Chen-1995)	0.618
		95% Modified-t UCL (Johnson-1978)	0.611

Nonparametric Distribution Free UCLs

95% CLT UCL	0.593	95% Jackknife UCL	0.607
95% Standard Bootstrap UCL	0.588	95% Bootstrap-t UCL	0.689
95% Hall's Bootstrap UCL	0.962	95% Percentile Bootstrap UCL	0.594
95% BCA Bootstrap UCL	0.608		
90% Chebyshev(Mean, Sd) UCL	0.645	95% Chebyshev(Mean, Sd) UCL	0.696
97.5% Chebyshev(Mean, Sd) UCL	0.768	99% Chebyshev(Mean, Sd) UCL	0.909

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.015	Mean	2.072
Maximum	2.13	Median	2.075
SD	0.0505	Std. Error of Mean	0.0206
Coefficient of Variation	0.0244	Skewness	-0.00979
Mean of logged Data	0.728	SD of logged Data	0.0244

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.113	95% Adjusted-CLT UCL (Chen-1995)	2.105
		95% Modified-t UCL (Johnson-1978)	2.113

Nonparametric Distribution Free UCLs

95% CLT UCL	2.106	95% Jackknife UCL	2.113
95% Standard Bootstrap UCL	2.104	95% Bootstrap-t UCL	2.115
95% Hall's Bootstrap UCL	2.091	95% Percentile Bootstrap UCL	2.103
95% BCA Bootstrap UCL	2.103		
90% Chebyshev(Mean, Sd) UCL	2.133	95% Chebyshev(Mean, Sd) UCL	2.161
97.5% Chebyshev(Mean, Sd) UCL	2.2	99% Chebyshev(Mean, Sd) UCL	2.277

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.025	Mean	3.603
Maximum	5.47	Median	3.765
SD	1.276	Std. Error of Mean	0.521
Coefficient of Variation	0.354	Skewness	0.131
Mean of logged Data	1.225	SD of logged Data	0.377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.652	95% Adjusted-CLT UCL (Chen-1995)	4.489
		95% Modified-t UCL (Johnson-1978)	4.657

Nonparametric Distribution Free UCLs

95% CLT UCL	4.459	95% Jackknife UCL	4.652
95% Standard Bootstrap UCL	4.368	95% Bootstrap-t UCL	4.606
95% Hall's Bootstrap UCL	4.445	95% Percentile Bootstrap UCL	4.403
95% BCA Bootstrap UCL	4.446		
90% Chebyshev(Mean, Sd) UCL	5.166	95% Chebyshev(Mean, Sd) UCL	5.873
97.5% Chebyshev(Mean, Sd) UCL	6.856	99% Chebyshev(Mean, Sd) UCL	8.786

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.73	Mean	4.883
Maximum	7.36	Median	5.205
SD	2.442	Std. Error of Mean	0.997
Coefficient of Variation	0.5	Skewness	-0.24
Mean of logged Data	1.454	SD of logged Data	0.596

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.892	95% Adjusted-CLT UCL (Chen-1995)	6.419
		95% Modified-t UCL (Johnson-1978)	6.876

Nonparametric Distribution Free UCLs

95% CLT UCL	6.523	95% Jackknife UCL	6.892
95% Standard Bootstrap UCL	6.39	95% Bootstrap-t UCL	6.824
95% Hall's Bootstrap UCL	5.913	95% Percentile Bootstrap UCL	6.372
95% BCA Bootstrap UCL	6.372		
90% Chebyshev(Mean, Sd) UCL	7.874	95% Chebyshev(Mean, Sd) UCL	9.229
97.5% Chebyshev(Mean, Sd) UCL	11.11	99% Chebyshev(Mean, Sd) UCL	14.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.115	Mean	6.448
Maximum	10.6	Median	6.455
SD	3.044	Std. Error of Mean	1.243
Coefficient of Variation	0.472	Skewness	0.174
Mean of logged Data	1.76	SD of logged Data	0.513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.951	95% Adjusted-CLT UCL (Chen-1995)	8.586
		95% Modified-t UCL (Johnson-1978)	8.966

Nonparametric Distribution Free UCLs

95% CLT UCL	8.491	95% Jackknife UCL	8.951
95% Standard Bootstrap UCL	8.299	95% Bootstrap-t UCL	9.168
95% Hall's Bootstrap UCL	8.182	95% Percentile Bootstrap UCL	8.282
95% BCA Bootstrap UCL	8.413		
90% Chebyshev(Mean, Sd) UCL	10.18	95% Chebyshev(Mean, Sd) UCL	11.86
97.5% Chebyshev(Mean, Sd) UCL	14.21	99% Chebyshev(Mean, Sd) UCL	18.81

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.25	Mean	3.896
Maximum	5.68	Median	3.75
SD	1.258	Std. Error of Mean	0.514
Coefficient of Variation	0.323	Skewness	0.201
Mean of logged Data	1.314	SD of logged Data	0.337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.931	95% Adjusted-CLT UCL (Chen-1995)	4.786
		95% Modified-t UCL (Johnson-1978)	4.938

Nonparametric Distribution Free UCLs

95% CLT UCL	4.741	95% Jackknife UCL	4.931
95% Standard Bootstrap UCL	4.662	95% Bootstrap-t UCL	4.989
95% Hall's Bootstrap UCL	4.849	95% Percentile Bootstrap UCL	4.703
95% BCA Bootstrap UCL	4.731		
90% Chebyshev(Mean, Sd) UCL	5.437	95% Chebyshev(Mean, Sd) UCL	6.135
97.5% Chebyshev(Mean, Sd) UCL	7.104	99% Chebyshev(Mean, Sd) UCL	9.007

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.025	Mean	2.776
Maximum	4.28	Median	2.535
SD	0.883	Std. Error of Mean	0.361
Coefficient of Variation	0.318	Skewness	1.069
Mean of logged Data	0.982	SD of logged Data	0.3

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.503	95% Adjusted-CLT UCL (Chen-1995)	3.537
		95% Modified-t UCL (Johnson-1978)	3.529

Nonparametric Distribution Free UCLs

95% CLT UCL	3.369	95% Jackknife UCL	3.503
95% Standard Bootstrap UCL	3.31	95% Bootstrap-t UCL	3.807
95% Hall's Bootstrap UCL	3.428	95% Percentile Bootstrap UCL	3.328
95% BCA Bootstrap UCL	3.372		
90% Chebyshev(Mean, Sd) UCL	3.858	95% Chebyshev(Mean, Sd) UCL	4.348
97.5% Chebyshev(Mean, Sd) UCL	5.028	99% Chebyshev(Mean, Sd) UCL	6.364

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.025	Mean	4.976
Maximum	7.78	Median	5.17
SD	2.541	Std. Error of Mean	1.038
Coefficient of Variation	0.511	Skewness	-0.0982
Mean of logged Data	1.474	SD of logged Data	0.584

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.067	95% Adjusted-CLT UCL (Chen-1995)	6.638
		95% Modified-t UCL (Johnson-1978)	7.06

Nonparametric Distribution Free UCLs

95% CLT UCL	6.682	95% Jackknife UCL	7.067
95% Standard Bootstrap UCL	6.537	95% Bootstrap-t UCL	7.027
95% Hall's Bootstrap UCL	6.071	95% Percentile Bootstrap UCL	6.52
95% BCA Bootstrap UCL	6.61		
90% Chebyshev(Mean, Sd) UCL	8.088	95% Chebyshev(Mean, Sd) UCL	9.498
97.5% Chebyshev(Mean, Sd) UCL	11.46	99% Chebyshev(Mean, Sd) UCL	15.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.1	Mean	3.188
Maximum	3.275	Median	3.195
SD	0.0783	Std. Error of Mean	0.032
Coefficient of Variation	0.0245	Skewness	-0.0479
Mean of logged Data	1.159	SD of logged Data	0.0246

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.253	95% Adjusted-CLT UCL (Chen-1995)	3.24
		95% Modified-t UCL (Johnson-1978)	3.253

Nonparametric Distribution Free UCLs

95% CLT UCL	3.241	95% Jackknife UCL	3.253
95% Standard Bootstrap UCL	3.236	95% Bootstrap-t UCL	3.256
95% Hall's Bootstrap UCL	3.219	95% Percentile Bootstrap UCL	3.236
95% BCA Bootstrap UCL	3.236		
90% Chebyshev(Mean, Sd) UCL	3.284	95% Chebyshev(Mean, Sd) UCL	3.328
97.5% Chebyshev(Mean, Sd) UCL	3.388	99% Chebyshev(Mean, Sd) UCL	3.506

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	7.553
Maximum	10.9	Median	8.215
SD	3.501	Std. Error of Mean	1.429
Coefficient of Variation	0.463	Skewness	-0.711
Mean of logged Data	1.887	SD of logged Data	0.637

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.43	95% Adjusted-CLT UCL (Chen-1995)	9.461
		95% Modified-t UCL (Johnson-1978)	10.36

Nonparametric Distribution Free UCLs

95% CLT UCL	9.904	95% Jackknife UCL	10.43
95% Standard Bootstrap UCL	9.709	95% Bootstrap-t UCL	10.04
95% Hall's Bootstrap UCL	9.212	95% Percentile Bootstrap UCL	9.648
95% BCA Bootstrap UCL	9.395		
90% Chebyshev(Mean, Sd) UCL	11.84	95% Chebyshev(Mean, Sd) UCL	13.78
97.5% Chebyshev(Mean, Sd) UCL	16.48	99% Chebyshev(Mean, Sd) UCL	21.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.24	Mean	1.275
Maximum	1.31	Median	1.278
SD	0.0316	Std. Error of Mean	0.0129
Coefficient of Variation	0.0248	Skewness	-0.0356
Mean of logged Data	0.243	SD of logged Data	0.0248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.301	95% Adjusted-CLT UCL (Chen-1995)	1.296
		95% Modified-t UCL (Johnson-1978)	1.301

Nonparametric Distribution Free UCLs

95% CLT UCL	1.296	95% Jackknife UCL	1.301
95% Standard Bootstrap UCL	1.295	95% Bootstrap-t UCL	1.303
95% Hall's Bootstrap UCL	1.287	95% Percentile Bootstrap UCL	1.295
95% BCA Bootstrap UCL	1.293		
90% Chebyshev(Mean, Sd) UCL	1.314	95% Chebyshev(Mean, Sd) UCL	1.331
97.5% Chebyshev(Mean, Sd) UCL	1.356	99% Chebyshev(Mean, Sd) UCL	1.403

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.88	Mean	3.941
Maximum	5.68	Median	3.785
SD	1.064	Std. Error of Mean	0.435
Coefficient of Variation	0.27	Skewness	0.827
Mean of logged Data	1.342	SD of logged Data	0.261

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.816	95% Adjusted-CLT UCL (Chen-1995)	4.812
		95% Modified-t UCL (Johnson-1978)	4.841

Nonparametric Distribution Free UCLs

95% CLT UCL	4.656	95% Jackknife UCL	4.816
95% Standard Bootstrap UCL	4.586	95% Bootstrap-t UCL	5.196
95% Hall's Bootstrap UCL	4.656	95% Percentile Bootstrap UCL	4.622
95% BCA Bootstrap UCL	4.773		
90% Chebyshev(Mean, Sd) UCL	5.244	95% Chebyshev(Mean, Sd) UCL	5.835
97.5% Chebyshev(Mean, Sd) UCL	6.654	99% Chebyshev(Mean, Sd) UCL	8.264

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.63	Mean	2.313
Maximum	2.97	Median	2.345
SD	0.633	Std. Error of Mean	0.259
Coefficient of Variation	0.274	Skewness	-0.0439

Mean of logged Data	0.806	SD of logged Data	0.282

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.834	95% Adjusted-CLT UCL (Chen-1995)	2.734
		95% Modified-t UCL (Johnson-1978)	2.833

Nonparametric Distribution Free UCLs

95% CLT UCL	2.739	95% Jackknife UCL	2.834
95% Standard Bootstrap UCL	2.703	95% Bootstrap-t UCL	2.836
95% Hall's Bootstrap UCL	2.541	95% Percentile Bootstrap UCL	2.703
95% BCA Bootstrap UCL	2.705		
90% Chebyshev(Mean, Sd) UCL	3.089	95% Chebyshev(Mean, Sd) UCL	3.44
97.5% Chebyshev(Mean, Sd) UCL	3.928	99% Chebyshev(Mean, Sd) UCL	4.886

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.115	Mean	4.576
Maximum	5.87	Median	4.505
SD	1.023	Std. Error of Mean	0.418
Coefficient of Variation	0.224	Skewness	-0.127
Mean of logged Data	1.499	SD of logged Data	0.233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.417	95% Adjusted-CLT UCL (Chen-1995)	5.24
		95% Modified-t UCL (Johnson-1978)	5.414

Nonparametric Distribution Free UCLs

95% CLT UCL	5.263	95% Jackknife UCL	5.417
95% Standard Bootstrap UCL	5.202	95% Bootstrap-t UCL	5.502
95% Hall's Bootstrap UCL	5.33	95% Percentile Bootstrap UCL	5.18
95% BCA Bootstrap UCL	5.208		

90% Chebyshev(Mean, Sd) UCL	5.829	95% Chebyshev(Mean, Sd) UCL	6.396
97.5% Chebyshev(Mean, Sd) UCL	7.184	99% Chebyshev(Mean, Sd) UCL	8.731

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.115	Mean	6.879
Maximum	9.98	Median	7.17
SD	2.916	Std. Error of Mean	1.19
Coefficient of Variation	0.424	Skewness	-0.22
Mean of logged Data	1.84	SD of logged Data	0.48

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.278	95% Adjusted-CLT UCL (Chen-1995)	8.723
		95% Modified-t UCL (Johnson-1978)	9.26

Nonparametric Distribution Free UCLs

95% CLT UCL	8.837	95% Jackknife UCL	9.278
95% Standard Bootstrap UCL	8.689	95% Bootstrap-t UCL	9.211
95% Hall's Bootstrap UCL	8.089	95% Percentile Bootstrap UCL	8.69
95% BCA Bootstrap UCL	8.607		
90% Chebyshev(Mean, Sd) UCL	10.45	95% Chebyshev(Mean, Sd) UCL	12.07
97.5% Chebyshev(Mean, Sd) UCL	14.31	99% Chebyshev(Mean, Sd) UCL	18.72

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:33:57 PM
From File	38002J.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	21.32
Maximum	47.1	Median	17.5
SD	12.78	Std. Error of Mean	5.218
Coefficient of Variation	0.6	Skewness	2.32
Mean of logged Data	2.955	SD of logged Data	0.457

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.83	95% Adjusted-CLT UCL (Chen-1995)	35.18
		95% Modified-t UCL (Johnson-1978)	32.65

Nonparametric Distribution Free UCLs

95% CLT UCL	29.9	95% Jackknife UCL	31.83
95% Standard Bootstrap UCL	29.22	95% Bootstrap-t UCL	59.65
95% Hall's Bootstrap UCL	84.64	95% Percentile Bootstrap UCL	31.1
95% BCA Bootstrap UCL	32.48		
90% Chebyshev(Mean, Sd) UCL	36.97	95% Chebyshev(Mean, Sd) UCL	44.06
97.5% Chebyshev(Mean, Sd) UCL	53.9	99% Chebyshev(Mean, Sd) UCL	73.23

Suggested UCL to Use

95% Student's-t UCL	31.83	or 95% Modified-t UCL	32.65

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.9	Mean	31.27
Maximum	91.5	Median	14.85
SD	31.2	Std. Error of Mean	12.74
Coefficient of Variation	0.998	Skewness	1.966
Mean of logged Data	3.131	SD of logged Data	0.794

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.93	95% Adjusted-CLT UCL (Chen-1995)	63.14
		95% Modified-t UCL (Johnson-1978)	58.63

Nonparametric Distribution Free UCLs

95% CLT UCL	52.21	95% Jackknife UCL	56.93
95% Standard Bootstrap UCL	50.61	95% Bootstrap-t UCL	622.5
95% Hall's Bootstrap UCL	334.8	95% Percentile Bootstrap UCL	52.85
95% BCA Bootstrap UCL	57.27		
90% Chebyshev(Mean, Sd) UCL	69.47	95% Chebyshev(Mean, Sd) UCL	86.78
97.5% Chebyshev(Mean, Sd) UCL	110.8	99% Chebyshev(Mean, Sd) UCL	158

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	86.78

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48.6	Mean	56.3
Maximum	66.8	Median	56.65
SD	6.951	Std. Error of Mean	2.838
Coefficient of Variation	0.123	Skewness	0.356
Mean of logged Data	4.024	SD of logged Data	0.123

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.02	95% Adjusted-CLT UCL (Chen-1995)	61.41
		95% Modified-t UCL (Johnson-1978)	62.09

Nonparametric Distribution Free UCLs

95% CLT UCL	60.97	95% Jackknife UCL	62.02
95% Standard Bootstrap UCL	60.59	95% Bootstrap-t UCL	62.76
95% Hall's Bootstrap UCL	61	95% Percentile Bootstrap UCL	60.92
95% BCA Bootstrap UCL	60.72		
90% Chebyshev(Mean, Sd) UCL	64.81	95% Chebyshev(Mean, Sd) UCL	68.67
97.5% Chebyshev(Mean, Sd) UCL	74.02	99% Chebyshev(Mean, Sd) UCL	84.53

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.729	Mean	1.458
Maximum	3.28	Median	1.235
SD	0.936	Std. Error of Mean	0.382
Coefficient of Variation	0.642	Skewness	1.961
Mean of logged Data	0.243	SD of logged Data	0.536

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.228	95% Adjusted-CLT UCL (Chen-1995)	2.413
		95% Modified-t UCL (Johnson-1978)	2.279

Nonparametric Distribution Free UCLs

95% CLT UCL	2.086	95% Jackknife UCL	2.228
95% Standard Bootstrap UCL	2.026	95% Bootstrap-t UCL	3.209
95% Hall's Bootstrap UCL	4.77	95% Percentile Bootstrap UCL	2.136
95% BCA Bootstrap UCL	2.241		
90% Chebyshev(Mean, Sd) UCL	2.604	95% Chebyshev(Mean, Sd) UCL	3.124
97.5% Chebyshev(Mean, Sd) UCL	3.845	99% Chebyshev(Mean, Sd) UCL	5.261

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.408	Mean	0.494
Maximum	0.556	Median	0.513
SD	0.0551	Std. Error of Mean	0.0225
Coefficient of Variation	0.112	Skewness	-0.769
Mean of logged Data	-0.712	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.539	95% Adjusted-CLT UCL (Chen-1995)	0.523
		95% Modified-t UCL (Johnson-1978)	0.538

Nonparametric Distribution Free UCLs

95% CLT UCL	0.531	95% Jackknife UCL	0.539
95% Standard Bootstrap UCL	0.528	95% Bootstrap-t UCL	0.53
95% Hall's Bootstrap UCL	0.521	95% Percentile Bootstrap UCL	0.526
95% BCA Bootstrap UCL	0.522		
90% Chebyshev(Mean, Sd) UCL	0.561	95% Chebyshev(Mean, Sd) UCL	0.592
97.5% Chebyshev(Mean, Sd) UCL	0.634	99% Chebyshev(Mean, Sd) UCL	0.718

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.02	Mean	2.073
Maximum	2.125	Median	2.073
SD	0.0455	Std. Error of Mean	0.0186
Coefficient of Variation	0.0219	Skewness	-2.20E-14
Mean of logged Data	0.729	SD of logged Data	0.0219

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.11	95% Adjusted-CLT UCL (Chen-1995)	2.103
		95% Modified-t UCL (Johnson-1978)	2.11

Nonparametric Distribution Free UCLs

95% CLT UCL	2.103	95% Jackknife UCL	2.11
95% Standard Bootstrap UCL	2.101	95% Bootstrap-t UCL	2.108
95% Hall's Bootstrap UCL	2.103	95% Percentile Bootstrap UCL	2.1
95% BCA Bootstrap UCL	2.1		
90% Chebyshev(Mean, Sd) UCL	2.128	95% Chebyshev(Mean, Sd) UCL	2.153
97.5% Chebyshev(Mean, Sd) UCL	2.188	99% Chebyshev(Mean, Sd) UCL	2.257

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.06	Mean	3.924
Maximum	6.76	Median	3.655
SD	1.831	Std. Error of Mean	0.748
Coefficient of Variation	0.467	Skewness	0.635
Mean of logged Data	1.274	SD of logged Data	0.476

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.431	95% Adjusted-CLT UCL (Chen-1995)	5.361
		95% Modified-t UCL (Johnson-1978)	5.463

Nonparametric Distribution Free UCLs

95% CLT UCL	5.154	95% Jackknife UCL	5.431
95% Standard Bootstrap UCL	5.078	95% Bootstrap-t UCL	6.136
95% Hall's Bootstrap UCL	7.333	95% Percentile Bootstrap UCL	4.997
95% BCA Bootstrap UCL	5.215		
90% Chebyshev(Mean, Sd) UCL	6.167	95% Chebyshev(Mean, Sd) UCL	7.183
97.5% Chebyshev(Mean, Sd) UCL	8.593	99% Chebyshev(Mean, Sd) UCL	11.36

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.72	Mean	4.591
Maximum	9.3	Median	3.945
SD	3.131	Std. Error of Mean	1.278
Coefficient of Variation	0.682	Skewness	0.565
Mean of logged Data	1.309	SD of logged Data	0.733

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.167	95% Adjusted-CLT UCL (Chen-1995)	7.008
		95% Modified-t UCL (Johnson-1978)	7.216

Nonparametric Distribution Free UCLs

95% CLT UCL	6.693	95% Jackknife UCL	7.167
95% Standard Bootstrap UCL	6.472	95% Bootstrap-t UCL	7.677
95% Hall's Bootstrap UCL	6.198	95% Percentile Bootstrap UCL	6.613
95% BCA Bootstrap UCL	6.613		
90% Chebyshev(Mean, Sd) UCL	8.426	95% Chebyshev(Mean, Sd) UCL	10.16
97.5% Chebyshev(Mean, Sd) UCL	12.57	99% Chebyshev(Mean, Sd) UCL	17.31

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.17	Mean	6.88
Maximum	10.7	Median	6.87
SD	3.283	Std. Error of Mean	1.34
Coefficient of Variation	0.477	Skewness	0.0105
Mean of logged Data	1.817	SD of logged Data	0.538

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.58	95% Adjusted-CLT UCL (Chen-1995)	9.09
		95% Modified-t UCL (Johnson-1978)	9.581

Nonparametric Distribution Free UCLs

95% CLT UCL	9.084	95% Jackknife UCL	9.58
95% Standard Bootstrap UCL	8.896	95% Bootstrap-t UCL	10
95% Hall's Bootstrap UCL	9.506	95% Percentile Bootstrap UCL	8.81
95% BCA Bootstrap UCL	8.793		
90% Chebyshev(Mean, Sd) UCL	10.9	95% Chebyshev(Mean, Sd) UCL	12.72
97.5% Chebyshev(Mean, Sd) UCL	15.25	99% Chebyshev(Mean, Sd) UCL	20.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.17	Mean	4.375
Maximum	7.07	Median	3.54
SD	1.615	Std. Error of Mean	0.659
Coefficient of Variation	0.369	Skewness	1.229
Mean of logged Data	1.426	SD of logged Data	0.336

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.704	95% Adjusted-CLT UCL (Chen-1995)	5.813
		95% Modified-t UCL (Johnson-1978)	5.759

Nonparametric Distribution Free UCLs

95% CLT UCL	5.46	95% Jackknife UCL	5.704
95% Standard Bootstrap UCL	5.361	95% Bootstrap-t UCL	10.91
95% Hall's Bootstrap UCL	14.07	95% Percentile Bootstrap UCL	5.423
95% BCA Bootstrap UCL	5.658		
90% Chebyshev(Mean, Sd) UCL	6.353	95% Chebyshev(Mean, Sd) UCL	7.25
97.5% Chebyshev(Mean, Sd) UCL	8.493	99% Chebyshev(Mean, Sd) UCL	10.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.06	Mean	3.928
Maximum	7.58	Median	3.465
SD	2.069	Std. Error of Mean	0.844
Coefficient of Variation	0.527	Skewness	1.254
Mean of logged Data	1.262	SD of logged Data	0.497

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.629	95% Adjusted-CLT UCL (Chen-1995)	5.778
		95% Modified-t UCL (Johnson-1978)	5.701

Nonparametric Distribution Free UCLs

95% CLT UCL	5.317	95% Jackknife UCL	5.629
95% Standard Bootstrap UCL	5.218	95% Bootstrap-t UCL	7.046
95% Hall's Bootstrap UCL	13.72	95% Percentile Bootstrap UCL	5.291
95% BCA Bootstrap UCL	5.527		
90% Chebyshev(Mean, Sd) UCL	6.461	95% Chebyshev(Mean, Sd) UCL	7.609
97.5% Chebyshev(Mean, Sd) UCL	9.201	99% Chebyshev(Mean, Sd) UCL	12.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.06	Mean	5.224
Maximum	8.72	Median	5.545
SD	2.706	Std. Error of Mean	1.105
Coefficient of Variation	0.518	Skewness	-0.136
Mean of logged Data	1.51	SD of logged Data	0.623

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.451	95% Adjusted-CLT UCL (Chen-1995)	6.976
		95% Modified-t UCL (Johnson-1978)	7.44

Nonparametric Distribution Free UCLs

95% CLT UCL	7.042	95% Jackknife UCL	7.451
95% Standard Bootstrap UCL	6.862	95% Bootstrap-t UCL	7.306
95% Hall's Bootstrap UCL	7.045	95% Percentile Bootstrap UCL	6.875
95% BCA Bootstrap UCL	6.817		
90% Chebyshev(Mean, Sd) UCL	8.539	95% Chebyshev(Mean, Sd) UCL	10.04
97.5% Chebyshev(Mean, Sd) UCL	12.12	99% Chebyshev(Mean, Sd) UCL	16.22

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.11	Mean	3.558
Maximum	5.42	Median	3.215
SD	0.915	Std. Error of Mean	0.374
Coefficient of Variation	0.257	Skewness	2.419
Mean of logged Data	1.247	SD of logged Data	0.218

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.31	95% Adjusted-CLT UCL (Chen-1995)	4.566
		95% Modified-t UCL (Johnson-1978)	4.372

Nonparametric Distribution Free UCLs

95% CLT UCL	4.172	95% Jackknife UCL	4.31
95% Standard Bootstrap UCL	4.105	95% Bootstrap-t UCL	9.763
95% Hall's Bootstrap UCL	8.916	95% Percentile Bootstrap UCL	4.292
95% BCA Bootstrap UCL	4.327		
90% Chebyshev(Mean, Sd) UCL	4.678	95% Chebyshev(Mean, Sd) UCL	5.186
97.5% Chebyshev(Mean, Sd) UCL	5.89	99% Chebyshev(Mean, Sd) UCL	7.274

Suggested UCL to Use

95% Student's-t UCL	4.31	or 95% Modified-t UCL	4.372

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.16	Mean	6.448
Maximum	9.47	Median	7.225
SD	2.6	Std. Error of Mean	1.061
Coefficient of Variation	0.403	Skewness	-0.884
Mean of logged Data	1.765	SD of logged Data	0.538

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.586	95% Adjusted-CLT UCL (Chen-1995)	7.784
		95% Modified-t UCL (Johnson-1978)	8.522

Nonparametric Distribution Free UCLs

95% CLT UCL	8.193	95% Jackknife UCL	8.586
95% Standard Bootstrap UCL	8.03	95% Bootstrap-t UCL	8.172
95% Hall's Bootstrap UCL	7.809	95% Percentile Bootstrap UCL	7.973
95% BCA Bootstrap UCL	7.818		
90% Chebyshev(Mean, Sd) UCL	9.632	95% Chebyshev(Mean, Sd) UCL	11.07
97.5% Chebyshev(Mean, Sd) UCL	13.08	99% Chebyshev(Mean, Sd) UCL	17.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.245	Mean	1.277
Maximum	1.31	Median	1.278
SD	0.0284	Std. Error of Mean	0.0116
Coefficient of Variation	0.0222	Skewness	-0.0451
Mean of logged Data	0.244	SD of logged Data	0.0223

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.3	95% Adjusted-CLT UCL (Chen-1995)	1.296
		95% Modified-t UCL (Johnson-1978)	1.3

Nonparametric Distribution Free UCLs

95% CLT UCL	1.296	95% Jackknife UCL	1.3
95% Standard Bootstrap UCL	1.294	95% Bootstrap-t UCL	1.297
95% Hall's Bootstrap UCL	1.295	95% Percentile Bootstrap UCL	1.293
95% BCA Bootstrap UCL	1.293		
90% Chebyshev(Mean, Sd) UCL	1.311	95% Chebyshev(Mean, Sd) UCL	1.327
97.5% Chebyshev(Mean, Sd) UCL	1.349	99% Chebyshev(Mean, Sd) UCL	1.392

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.17	Mean	4.8
Maximum	8.33	Median	3.845
SD	2.082	Std. Error of Mean	0.85
Coefficient of Variation	0.434	Skewness	1.26
Mean of logged Data	1.5	SD of logged Data	0.393

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.513	95% Adjusted-CLT UCL (Chen-1995)	6.665
		95% Modified-t UCL (Johnson-1978)	6.586

Nonparametric Distribution Free UCLs

95% CLT UCL	6.198	95% Jackknife UCL	6.513
95% Standard Bootstrap UCL	6.07	95% Bootstrap-t UCL	12.63
95% Hall's Bootstrap UCL	16.6	95% Percentile Bootstrap UCL	6.107
95% BCA Bootstrap UCL	6.503		
90% Chebyshev(Mean, Sd) UCL	7.35	95% Chebyshev(Mean, Sd) UCL	8.506
97.5% Chebyshev(Mean, Sd) UCL	10.11	99% Chebyshev(Mean, Sd) UCL	13.26

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.18	Mean	2.113
Maximum	2.98	Median	2.205
SD	0.718	Std. Error of Mean	0.293
Coefficient of Variation	0.34	Skewness	-0.235
Mean of logged Data	0.694	SD of logged Data	0.372

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.704	95% Adjusted-CLT UCL (Chen-1995)	2.566
		95% Modified-t UCL (Johnson-1978)	2.7

Nonparametric Distribution Free UCLs

95% CLT UCL	2.596	95% Jackknife UCL	2.704
95% Standard Bootstrap UCL	2.551	95% Bootstrap-t UCL	2.689
95% Hall's Bootstrap UCL	2.495	95% Percentile Bootstrap UCL	2.538
95% BCA Bootstrap UCL	2.523		
90% Chebyshev(Mean, Sd) UCL	2.993	95% Chebyshev(Mean, Sd) UCL	3.392
97.5% Chebyshev(Mean, Sd) UCL	3.945	99% Chebyshev(Mean, Sd) UCL	5.031

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.1	Mean	3.513
Maximum	4.14	Median	3.465
SD	0.403	Std. Error of Mean	0.165
Coefficient of Variation	0.115	Skewness	0.619
Mean of logged Data	1.251	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.845	95% Adjusted-CLT UCL (Chen-1995)	3.829
		95% Modified-t UCL (Johnson-1978)	3.852

Nonparametric Distribution Free UCLs

95% CLT UCL	3.784	95% Jackknife UCL	3.845
95% Standard Bootstrap UCL	3.766	95% Bootstrap-t UCL	3.977
95% Hall's Bootstrap UCL	3.753	95% Percentile Bootstrap UCL	3.765
95% BCA Bootstrap UCL	3.778		
90% Chebyshev(Mean, Sd) UCL	4.007	95% Chebyshev(Mean, Sd) UCL	4.231
97.5% Chebyshev(Mean, Sd) UCL	4.542	99% Chebyshev(Mean, Sd) UCL	5.152

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.17	Mean	5.893
Maximum	9.01	Median	6.385
SD	2.286	Std. Error of Mean	0.933
Coefficient of Variation	0.388	Skewness	-0.143
Mean of logged Data	1.702	SD of logged Data	0.432

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.774	95% Adjusted-CLT UCL (Chen-1995)	7.37
		95% Modified-t UCL (Johnson-1978)	7.765

Nonparametric Distribution Free UCLs

95% CLT UCL	7.428	95% Jackknife UCL	7.774
95% Standard Bootstrap UCL	7.274	95% Bootstrap-t UCL	7.81
95% Hall's Bootstrap UCL	7.186	95% Percentile Bootstrap UCL	7.272
95% BCA Bootstrap UCL	7.195		
90% Chebyshev(Mean, Sd) UCL	8.693	95% Chebyshev(Mean, Sd) UCL	9.961
97.5% Chebyshev(Mean, Sd) UCL	11.72	99% Chebyshev(Mean, Sd) UCL	15.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/26/2021 11:32:37 AM
From File	38002K.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.2	Mean	14.2
Maximum	16.8	Median	13.7
SD	2.048	Std. Error of Mean	0.836
Coefficient of Variation	0.144	Skewness	0.351
Mean of logged Data	2.645	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.89	95% Adjusted-CLT UCL (Chen-1995)	15.7
		95% Modified-t UCL (Johnson-1978)	15.91

Nonparametric Distribution Free UCLs

95% CLT UCL	15.58	95% Jackknife UCL	15.89
95% Standard Bootstrap UCL	15.48	95% Bootstrap-t UCL	17.03
95% Hall's Bootstrap UCL	15.13	95% Percentile Bootstrap UCL	15.58
95% BCA Bootstrap UCL	15.42		
90% Chebyshev(Mean, Sd) UCL	16.71	95% Chebyshev(Mean, Sd) UCL	17.85
97.5% Chebyshev(Mean, Sd) UCL	19.42	99% Chebyshev(Mean, Sd) UCL	22.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12	Mean	13.2
Maximum	14.8	Median	13.15
SD	0.94	Std. Error of Mean	0.384
Coefficient of Variation	0.0712	Skewness	0.806
Mean of logged Data	2.578	SD of logged Data	0.0702

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.97	95% Adjusted-CLT UCL (Chen-1995)	13.97
		95% Modified-t UCL (Johnson-1978)	13.99

Nonparametric Distribution Free UCLs

95% CLT UCL	13.83	95% Jackknife UCL	13.97
95% Standard Bootstrap UCL	13.79	95% Bootstrap-t UCL	14.21
95% Hall's Bootstrap UCL	14.9	95% Percentile Bootstrap UCL	13.78
95% BCA Bootstrap UCL	13.78		
90% Chebyshev(Mean, Sd) UCL	14.35	95% Chebyshev(Mean, Sd) UCL	14.87
97.5% Chebyshev(Mean, Sd) UCL	15.6	99% Chebyshev(Mean, Sd) UCL	17.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.3	Mean	49.68
Maximum	54.9	Median	49
SD	4.356	Std. Error of Mean	1.778
Coefficient of Variation	0.0877	Skewness	0.194
Mean of logged Data	3.902	SD of logged Data	0.0874

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.27	95% Adjusted-CLT UCL (Chen-1995)	52.76
		95% Modified-t UCL (Johnson-1978)	53.29

Nonparametric Distribution Free UCLs

95% CLT UCL	52.61	95% Jackknife UCL	53.27
95% Standard Bootstrap UCL	52.39	95% Bootstrap-t UCL	53.12
95% Hall's Bootstrap UCL	51.37	95% Percentile Bootstrap UCL	52.33
95% BCA Bootstrap UCL	52.33		
90% Chebyshev(Mean, Sd) UCL	55.02	95% Chebyshev(Mean, Sd) UCL	57.44
97.5% Chebyshev(Mean, Sd) UCL	60.79	99% Chebyshev(Mean, Sd) UCL	67.38

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.955	Mean	0.975
Maximum	0.995	Median	0.973
SD	0.017	Std. Error of Mean	0.00695
Coefficient of Variation	0.0175	Skewness	0.273
Mean of logged Data	-0.0254	SD of logged Data	0.0174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.989	95% Adjusted-CLT UCL (Chen-1995)	0.987
		95% Modified-t UCL (Johnson-1978)	0.989

Nonparametric Distribution Free UCLs

95% CLT UCL	0.986	95% Jackknife UCL	0.989
95% Standard Bootstrap UCL	0.985	95% Bootstrap-t UCL	0.996
95% Hall's Bootstrap UCL	0.994	95% Percentile Bootstrap UCL	0.986
95% BCA Bootstrap UCL	0.986		
90% Chebyshev(Mean, Sd) UCL	0.996	95% Chebyshev(Mean, Sd) UCL	1.005
97.5% Chebyshev(Mean, Sd) UCL	1.018	99% Chebyshev(Mean, Sd) UCL	1.044

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.51	Mean	0.52
Maximum	0.53	Median	0.52
SD	0.00894	Std. Error of Mean	0.00365
Coefficient of Variation	0.0172	Skewness	0
Mean of logged Data	-0.654	SD of logged Data	0.0172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.527	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.527

Nonparametric Distribution Free UCLs

95% CLT UCL	0.526	95% Jackknife UCL	0.527
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.531	95% Chebyshev(Mean, Sd) UCL	0.536
97.5% Chebyshev(Mean, Sd) UCL	0.543	99% Chebyshev(Mean, Sd) UCL	0.556

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.065	Mean	2.112
Maximum	2.155	Median	2.11
SD	0.0363	Std. Error of Mean	0.0148
Coefficient of Variation	0.0172	Skewness	0.0255
Mean of logged Data	0.747	SD of logged Data	0.0172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.142	95% Adjusted-CLT UCL (Chen-1995)	2.136
		95% Modified-t UCL (Johnson-1978)	2.142

Nonparametric Distribution Free UCLs

95% CLT UCL	2.136	95% Jackknife UCL	2.142
95% Standard Bootstrap UCL	2.134	95% Bootstrap-t UCL	2.143
95% Hall's Bootstrap UCL	2.144	95% Percentile Bootstrap UCL	2.133
95% BCA Bootstrap UCL	2.134		
90% Chebyshev(Mean, Sd) UCL	2.156	95% Chebyshev(Mean, Sd) UCL	2.176
97.5% Chebyshev(Mean, Sd) UCL	2.204	99% Chebyshev(Mean, Sd) UCL	2.259

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	3.44
Maximum	5.73	Median	2.808
SD	1.628	Std. Error of Mean	0.665
Coefficient of Variation	0.473	Skewness	0.668
Mean of logged Data	1.144	SD of logged Data	0.463

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.779	95% Adjusted-CLT UCL (Chen-1995)	4.727
		95% Modified-t UCL (Johnson-1978)	4.81

Nonparametric Distribution Free UCLs

95% CLT UCL	4.533	95% Jackknife UCL	4.779
95% Standard Bootstrap UCL	4.442	95% Bootstrap-t UCL	5.494
95% Hall's Bootstrap UCL	4.29	95% Percentile Bootstrap UCL	4.49
95% BCA Bootstrap UCL	4.644		
90% Chebyshev(Mean, Sd) UCL	5.434	95% Chebyshev(Mean, Sd) UCL	6.338
97.5% Chebyshev(Mean, Sd) UCL	7.591	99% Chebyshev(Mean, Sd) UCL	10.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	3.974
Maximum	8.37	Median	2.135
SD	2.914	Std. Error of Mean	1.19
Coefficient of Variation	0.733	Skewness	1.06
Mean of logged Data	1.178	SD of logged Data	0.668

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	6.371	95% Adjusted-CLT UCL (Chen-1995)	6.481
		95% Modified-t UCL (Johnson-1978)	6.457

Nonparametric Distribution Free UCLs

95% CLT UCL	5.931	95% Jackknife UCL	6.371
95% Standard Bootstrap UCL	5.791	95% Bootstrap-t UCL	200.5
95% Hall's Bootstrap UCL	152.6	95% Percentile Bootstrap UCL	5.836
95% BCA Bootstrap UCL	6.065		
90% Chebyshev(Mean, Sd) UCL	7.543	95% Chebyshev(Mean, Sd) UCL	9.159
97.5% Chebyshev(Mean, Sd) UCL	11.4	99% Chebyshev(Mean, Sd) UCL	15.81

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.159

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	5.882
Maximum	10.5	Median	4.828
SD	3.164	Std. Error of Mean	1.292
Coefficient of Variation	0.538	Skewness	0.627
Mean of logged Data	1.65	SD of logged Data	0.539

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.484	95% Adjusted-CLT UCL (Chen-1995)	8.36
		95% Modified-t UCL (Johnson-1978)	8.539

Nonparametric Distribution Free UCLs

95% CLT UCL	8.006	95% Jackknife UCL	8.484
95% Standard Bootstrap UCL	7.813	95% Bootstrap-t UCL	11.18
95% Hall's Bootstrap UCL	8.361	95% Percentile Bootstrap UCL	7.916
95% BCA Bootstrap UCL	7.993		
90% Chebyshev(Mean, Sd) UCL	9.757	95% Chebyshev(Mean, Sd) UCL	11.51
97.5% Chebyshev(Mean, Sd) UCL	13.95	99% Chebyshev(Mean, Sd) UCL	18.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.1	Mean	3.783
Maximum	5.28	Median	3.285
SD	0.909	Std. Error of Mean	0.371
Coefficient of Variation	0.24	Skewness	1.211
Mean of logged Data	1.309	SD of logged Data	0.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.531	95% Adjusted-CLT UCL (Chen-1995)	4.59
		95% Modified-t UCL (Johnson-1978)	4.562

Nonparametric Distribution Free UCLs

95% CLT UCL	4.394	95% Jackknife UCL	4.531
95% Standard Bootstrap UCL	4.334	95% Bootstrap-t UCL	10.22
95% Hall's Bootstrap UCL	11.92	95% Percentile Bootstrap UCL	4.372
95% BCA Bootstrap UCL	4.468		
90% Chebyshev(Mean, Sd) UCL	4.897	95% Chebyshev(Mean, Sd) UCL	5.401
97.5% Chebyshev(Mean, Sd) UCL	6.101	99% Chebyshev(Mean, Sd) UCL	7.477

Suggested UCL to Use

95% Student's-t UCL	4.531	or 95% Modified-t UCL	4.562

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	2.86
Maximum	4.21	Median	2.278
SD	1.048	Std. Error of Mean	0.428
Coefficient of Variation	0.366	Skewness	0.921
Mean of logged Data	1	SD of logged Data	0.342

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.722	95% Adjusted-CLT UCL (Chen-1995)	3.735
		95% Modified-t UCL (Johnson-1978)	3.749

Nonparametric Distribution Free UCLs

95% CLT UCL	3.564	95% Jackknife UCL	3.722
95% Standard Bootstrap UCL	3.505	95% Bootstrap-t UCL	8.107
95% Hall's Bootstrap UCL	12.88	95% Percentile Bootstrap UCL	3.55
95% BCA Bootstrap UCL	3.564		
90% Chebyshev(Mean, Sd) UCL	4.143	95% Chebyshev(Mean, Sd) UCL	4.725
97.5% Chebyshev(Mean, Sd) UCL	5.532	99% Chebyshev(Mean, Sd) UCL	7.116

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	4.093
Maximum	7.06	Median	3.403
SD	2.308	Std. Error of Mean	0.942
Coefficient of Variation	0.564	Skewness	0.416
Mean of logged Data	1.269	SD of logged Data	0.586

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.992	95% Adjusted-CLT UCL (Chen-1995)	5.814
		95% Modified-t UCL (Johnson-1978)	6.018

Nonparametric Distribution Free UCLs

95% CLT UCL	5.643	95% Jackknife UCL	5.992
95% Standard Bootstrap UCL	5.505	95% Bootstrap-t UCL	6.091
95% Hall's Bootstrap UCL	5.406	95% Percentile Bootstrap UCL	5.554
95% BCA Bootstrap UCL	5.642		
90% Chebyshev(Mean, Sd) UCL	6.92	95% Chebyshev(Mean, Sd) UCL	8.2
97.5% Chebyshev(Mean, Sd) UCL	9.977	99% Chebyshev(Mean, Sd) UCL	13.47

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	3.175	Mean	3.249
Maximum	3.315	Median	3.248
SD	0.0567	Std. Error of Mean	0.0231
Coefficient of Variation	0.0174	Skewness	-0.0279
Mean of logged Data	1.178	SD of logged Data	0.0175

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.296	95% Adjusted-CLT UCL (Chen-1995)	3.287
		95% Modified-t UCL (Johnson-1978)	3.296

Nonparametric Distribution Free UCLs

95% CLT UCL	3.287	95% Jackknife UCL	3.296
95% Standard Bootstrap UCL	3.283	95% Bootstrap-t UCL	3.298
95% Hall's Bootstrap UCL	3.297	95% Percentile Bootstrap UCL	3.284
95% BCA Bootstrap UCL	3.284		
90% Chebyshev(Mean, Sd) UCL	3.319	95% Chebyshev(Mean, Sd) UCL	3.35
97.5% Chebyshev(Mean, Sd) UCL	3.394	99% Chebyshev(Mean, Sd) UCL	3.479

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	5.602
Maximum	10.5	Median	4.943
SD	3.917	Std. Error of Mean	1.599
Coefficient of Variation	0.699	Skewness	0.202
Mean of logged Data	1.474	SD of logged Data	0.8

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.824	95% Adjusted-CLT UCL (Chen-1995)	8.373
		95% Modified-t UCL (Johnson-1978)	8.846

Nonparametric Distribution Free UCLs

95% CLT UCL	8.232	95% Jackknife UCL	8.824
95% Standard Bootstrap UCL	8.007	95% Bootstrap-t UCL	8.844
95% Hall's Bootstrap UCL	6.99	95% Percentile Bootstrap UCL	7.941
95% BCA Bootstrap UCL	8.145		
90% Chebyshev(Mean, Sd) UCL	10.4	95% Chebyshev(Mean, Sd) UCL	12.57
97.5% Chebyshev(Mean, Sd) UCL	15.59	99% Chebyshev(Mean, Sd) UCL	21.51

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.27	Mean	1.3
Maximum	1.325	Median	1.3
SD	0.0228	Std. Error of Mean	0.00931
Coefficient of Variation	0.0175	Skewness	-0.0949
Mean of logged Data	0.262	SD of logged Data	0.0176

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.319	95% Adjusted-CLT UCL (Chen-1995)	1.315
		95% Modified-t UCL (Johnson-1978)	1.319

Nonparametric Distribution Free UCLs

95% CLT UCL	1.315	95% Jackknife UCL	1.319
95% Standard Bootstrap UCL	1.314	95% Bootstrap-t UCL	1.318
95% Hall's Bootstrap UCL	1.316	95% Percentile Bootstrap UCL	1.313
95% BCA Bootstrap UCL	1.312		
90% Chebyshev(Mean, Sd) UCL	1.328	95% Chebyshev(Mean, Sd) UCL	1.341
97.5% Chebyshev(Mean, Sd) UCL	1.358	99% Chebyshev(Mean, Sd) UCL	1.393

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	4.2
Maximum	6.25	Median	3.528
SD	1.314	Std. Error of Mean	0.536
Coefficient of Variation	0.313	Skewness	1.044
Mean of logged Data	1.398	SD of logged Data	0.292

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.281	95% Adjusted-CLT UCL (Chen-1995)	5.326
		95% Modified-t UCL (Johnson-1978)	5.319

Nonparametric Distribution Free UCLs

95% CLT UCL	5.082	95% Jackknife UCL	5.281
95% Standard Bootstrap UCL	5.007	95% Bootstrap-t UCL	8.44
95% Hall's Bootstrap UCL	13.77	95% Percentile Bootstrap UCL	5.067
95% BCA Bootstrap UCL	5.198		
90% Chebyshev(Mean, Sd) UCL	5.809	95% Chebyshev(Mean, Sd) UCL	6.538
97.5% Chebyshev(Mean, Sd) UCL	7.549	99% Chebyshev(Mean, Sd) UCL	9.536

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.96	Mean	1.655
Maximum	2.44	Median	1.608
SD	0.746	Std. Error of Mean	0.305
Coefficient of Variation	0.451	Skewness	0.0345
Mean of logged Data	0.411	SD of logged Data	0.478

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.269	95% Adjusted-CLT UCL (Chen-1995)	2.161
		95% Modified-t UCL (Johnson-1978)	2.27

Nonparametric Distribution Free UCLs

95% CLT UCL	2.156	95% Jackknife UCL	2.269
95% Standard Bootstrap UCL	2.099	95% Bootstrap-t UCL	2.262
95% Hall's Bootstrap UCL	1.906	95% Percentile Bootstrap UCL	2.113
95% BCA Bootstrap UCL	2.109		
90% Chebyshev(Mean, Sd) UCL	2.569	95% Chebyshev(Mean, Sd) UCL	2.983
97.5% Chebyshev(Mean, Sd) UCL	3.558	99% Chebyshev(Mean, Sd) UCL	4.687

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	3.71
Maximum	5	Median	3.518
SD	0.677	Std. Error of Mean	0.276
Coefficient of Variation	0.182	Skewness	1.798
Mean of logged Data	1.299	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.267	95% Adjusted-CLT UCL (Chen-1995)	4.381
		95% Modified-t UCL (Johnson-1978)	4.301

Nonparametric Distribution Free UCLs

95% CLT UCL	4.165	95% Jackknife UCL	4.267
95% Standard Bootstrap UCL	4.132	95% Bootstrap-t UCL	5.009
95% Hall's Bootstrap UCL	5.774	95% Percentile Bootstrap UCL	4.195
95% BCA Bootstrap UCL	4.301		
90% Chebyshev(Mean, Sd) UCL	4.539	95% Chebyshev(Mean, Sd) UCL	4.915
97.5% Chebyshev(Mean, Sd) UCL	5.436	99% Chebyshev(Mean, Sd) UCL	6.46

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	5.873

Maximum	9.59	Median	5.343
SD	2.951	Std. Error of Mean	1.205
Coefficient of Variation	0.503	Skewness	0.224
Mean of logged Data	1.657	SD of logged Data	0.528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.301	95% Adjusted-CLT UCL (Chen-1995)	7.973
		95% Modified-t UCL (Johnson-1978)	8.32

Nonparametric Distribution Free UCLs

95% CLT UCL	7.855	95% Jackknife UCL	8.301
95% Standard Bootstrap UCL	7.633	95% Bootstrap-t UCL	8.284
95% Hall's Bootstrap UCL	6.933	95% Percentile Bootstrap UCL	7.634
95% BCA Bootstrap UCL	7.795		
90% Chebyshev(Mean, Sd) UCL	9.488	95% Chebyshev(Mean, Sd) UCL	11.13
97.5% Chebyshev(Mean, Sd) UCL	13.4	99% Chebyshev(Mean, Sd) UCL	17.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:36:14 PM
From File	38002L.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.3	Mean	14.22
Maximum	15.9	Median	14.25
SD	1.169	Std. Error of Mean	0.477
Coefficient of Variation	0.0822	Skewness	-0.416
Mean of logged Data	2.652	SD of logged Data	0.0837

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.18	95% Adjusted-CLT UCL (Chen-1995)	14.91
		95% Modified-t UCL (Johnson-1978)	15.16

Nonparametric Distribution Free UCLs

95% CLT UCL	15	95% Jackknife UCL	15.18
95% Standard Bootstrap UCL	14.94	95% Bootstrap-t UCL	15.03
95% Hall's Bootstrap UCL	15.08	95% Percentile Bootstrap UCL	14.92
95% BCA Bootstrap UCL	14.9		
90% Chebyshev(Mean, Sd) UCL	15.65	95% Chebyshev(Mean, Sd) UCL	16.3
97.5% Chebyshev(Mean, Sd) UCL	17.2	99% Chebyshev(Mean, Sd) UCL	18.96

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.7	Mean	12.52
Maximum	13.8	Median	12.4
SD	0.902	Std. Error of Mean	0.368
Coefficient of Variation	0.0721	Skewness	0.395

Mean of logged Data	2.525	SD of logged Data	0.0715

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.26	95% Adjusted-CLT UCL (Chen-1995)	13.19
		95% Modified-t UCL (Johnson-1978)	13.27

Nonparametric Distribution Free UCLs

95% CLT UCL	13.12	95% Jackknife UCL	13.26
95% Standard Bootstrap UCL	13.07	95% Bootstrap-t UCL	13.42
95% Hall's Bootstrap UCL	12.92	95% Percentile Bootstrap UCL	13.08
95% BCA Bootstrap UCL	13.07		
90% Chebyshev(Mean, Sd) UCL	13.62	95% Chebyshev(Mean, Sd) UCL	14.12
97.5% Chebyshev(Mean, Sd) UCL	14.82	99% Chebyshev(Mean, Sd) UCL	16.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.4	Mean	49.72
Maximum	54.6	Median	49.35
SD	2.949	Std. Error of Mean	1.204
Coefficient of Variation	0.0593	Skewness	0.422
Mean of logged Data	3.905	SD of logged Data	0.059

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.14	95% Adjusted-CLT UCL (Chen-1995)	51.92
		95% Modified-t UCL (Johnson-1978)	52.18

Nonparametric Distribution Free UCLs

95% CLT UCL	51.7	95% Jackknife UCL	52.14
95% Standard Bootstrap UCL	51.49	95% Bootstrap-t UCL	52.27
95% Hall's Bootstrap UCL	53.9	95% Percentile Bootstrap UCL	51.5
95% BCA Bootstrap UCL	51.45		
90% Chebyshev(Mean, Sd) UCL	53.33	95% Chebyshev(Mean, Sd) UCL	54.96
97.5% Chebyshev(Mean, Sd) UCL	57.24	99% Chebyshev(Mean, Sd) UCL	61.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.91	Mean	1.132
Maximum	1.97	Median	0.98
SD	0.412	Std. Error of Mean	0.168
Coefficient of Variation	0.364	Skewness	2.423
Mean of logged Data	0.0821	SD of logged Data	0.293

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.47	95% Adjusted-CLT UCL (Chen-1995)	1.586
		95% Modified-t UCL (Johnson-1978)	1.498

Nonparametric Distribution Free UCLs

95% CLT UCL	1.408	95% Jackknife UCL	1.47
95% Standard Bootstrap UCL	1.391	95% Bootstrap-t UCL	8.594
95% Hall's Bootstrap UCL	4.776	95% Percentile Bootstrap UCL	1.463
95% BCA Bootstrap UCL	1.478		
90% Chebyshev(Mean, Sd) UCL	1.636	95% Chebyshev(Mean, Sd) UCL	1.864
97.5% Chebyshev(Mean, Sd) UCL	2.181	99% Chebyshev(Mean, Sd) UCL	2.804

Suggested UCL to Use

95% Student's-t UCL	1.47	or 95% Modified-t UCL	1.498

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.487	Mean	0.747
Maximum	1.91	Median	0.523
SD	0.57	Std. Error of Mean	0.233
Coefficient of Variation	0.763	Skewness	2.446
Mean of logged Data	-0.447	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.216	95% Adjusted-CLT UCL (Chen-1995)	1.378
		95% Modified-t UCL (Johnson-1978)	1.255

Nonparametric Distribution Free UCLs

95% CLT UCL	1.13	95% Jackknife UCL	1.216
95% Standard Bootstrap UCL	1.101	95% Bootstrap-t UCL	31.32
95% Hall's Bootstrap UCL	11.22	95% Percentile Bootstrap UCL	1.209
95% BCA Bootstrap UCL	1.217		
90% Chebyshev(Mean, Sd) UCL	1.445	95% Chebyshev(Mean, Sd) UCL	1.761
97.5% Chebyshev(Mean, Sd) UCL	2.2	99% Chebyshev(Mean, Sd) UCL	3.062

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.761

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	2.198
Maximum	2.75	Median	2.12
SD	0.277	Std. Error of Mean	0.113
Coefficient of Variation	0.126	Skewness	2.181
Mean of logged Data	0.782	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.426	95% Adjusted-CLT UCL (Chen-1995)	2.492
		95% Modified-t UCL (Johnson-1978)	2.443

Nonparametric Distribution Free UCLs

95% CLT UCL	2.384	95% Jackknife UCL	2.426
95% Standard Bootstrap UCL	2.369	95% Bootstrap-t UCL	3.215
95% Hall's Bootstrap UCL	3.491	95% Percentile Bootstrap UCL	2.416
95% BCA Bootstrap UCL	2.438		
90% Chebyshev(Mean, Sd) UCL	2.537	95% Chebyshev(Mean, Sd) UCL	2.691
97.5% Chebyshev(Mean, Sd) UCL	2.904	99% Chebyshev(Mean, Sd) UCL	3.322

Suggested UCL to Use

95% Student's-t UCL	2.426	or 95% Modified-t UCL	2.443

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.89	Mean	5.481
Maximum	22.1	Median	2.135
SD	8.146	Std. Error of Mean	3.326
Coefficient of Variation	1.486	Skewness	2.444
Mean of logged Data	1.151	SD of logged Data	0.96

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.18	95% Adjusted-CLT UCL (Chen-1995)	14.5
		95% Modified-t UCL (Johnson-1978)	12.74

Nonparametric Distribution Free UCLs

95% CLT UCL	10.95	95% Jackknife UCL	12.18
95% Standard Bootstrap UCL	10.43	95% Bootstrap-t UCL	263.3
95% Hall's Bootstrap UCL	105.4	95% Percentile Bootstrap UCL	12.08
95% BCA Bootstrap UCL	12.29		
90% Chebyshev(Mean, Sd) UCL	15.46	95% Chebyshev(Mean, Sd) UCL	19.98
97.5% Chebyshev(Mean, Sd) UCL	26.25	99% Chebyshev(Mean, Sd) UCL	38.57

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.98

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	6.444
Maximum	27.4	Median	2.135
SD	10.27	Std. Error of Mean	4.194
Coefficient of Variation	1.594	Skewness	2.443
Mean of logged Data	1.22	SD of logged Data	1.034

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.89	95% Adjusted-CLT UCL (Chen-1995)	17.81
		95% Modified-t UCL (Johnson-1978)	15.59

Nonparametric Distribution Free UCLs

95% CLT UCL	13.34	95% Jackknife UCL	14.89
95% Standard Bootstrap UCL	12.83	95% Bootstrap-t UCL	615.2
95% Hall's Bootstrap UCL	336.3	95% Percentile Bootstrap UCL	14.76
95% BCA Bootstrap UCL	15.01		
90% Chebyshev(Mean, Sd) UCL	19.02	95% Chebyshev(Mean, Sd) UCL	24.72
97.5% Chebyshev(Mean, Sd) UCL	32.63	99% Chebyshev(Mean, Sd) UCL	48.17

Suggested UCL to Use

95% Hall's Bootstrap UCL 336.3

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.04	Mean	8.483
Maximum	32.7	Median	3.455
SD	11.88	Std. Error of Mean	4.852
Coefficient of Variation	1.401	Skewness	2.431
Mean of logged Data	1.645	SD of logged Data	0.919

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.26	95% Adjusted-CLT UCL (Chen-1995)	21.61
		95% Modified-t UCL (Johnson-1978)	19.06

Nonparametric Distribution Free UCLs

95% CLT UCL	16.46	95% Jackknife UCL	18.26
95% Standard Bootstrap UCL	15.67	95% Bootstrap-t UCL	279.9
95% Hall's Bootstrap UCL	138	95% Percentile Bootstrap UCL	18.01
95% BCA Bootstrap UCL	22.9		
90% Chebyshev(Mean, Sd) UCL	23.04	95% Chebyshev(Mean, Sd) UCL	29.63
97.5% Chebyshev(Mean, Sd) UCL	38.78	99% Chebyshev(Mean, Sd) UCL	56.76

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 29.63

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.47	Mean	5.354
Maximum	16.8	Median	3.263
SD	5.616	Std. Error of Mean	2.293
Coefficient of Variation	1.049	Skewness	2.432
Mean of logged Data	1.399	SD of logged Data	0.705

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.974	95% Adjusted-CLT UCL (Chen-1995)	11.56
		95% Modified-t UCL (Johnson-1978)	10.35

Nonparametric Distribution Free UCLs

95% CLT UCL	9.125	95% Jackknife UCL	9.974
95% Standard Bootstrap UCL	8.8	95% Bootstrap-t UCL	125.3
95% Hall's Bootstrap UCL	75.84	95% Percentile Bootstrap UCL	9.772
95% BCA Bootstrap UCL	10.03		
90% Chebyshev(Mean, Sd) UCL	12.23	95% Chebyshev(Mean, Sd) UCL	15.35
97.5% Chebyshev(Mean, Sd) UCL	19.67	99% Chebyshev(Mean, Sd) UCL	28.17

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	15.35

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	4.04
Maximum	13.8	Median	2.12
SD	4.782	Std. Error of Mean	1.952
Coefficient of Variation	1.184	Skewness	2.449
Mean of logged Data	1.051	SD of logged Data	0.772

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.974	95% Adjusted-CLT UCL (Chen-1995)	9.336
		95% Modified-t UCL (Johnson-1978)	8.299

Nonparametric Distribution Free UCLs

95% CLT UCL	7.251	95% Jackknife UCL	7.974
95% Standard Bootstrap UCL	6.972	95% Bootstrap-t UCL	422
95% Hall's Bootstrap UCL	197.2	95% Percentile Bootstrap UCL	7.933
95% BCA Bootstrap UCL	7.963		
90% Chebyshev(Mean, Sd) UCL	9.896	95% Chebyshev(Mean, Sd) UCL	12.55
97.5% Chebyshev(Mean, Sd) UCL	16.23	99% Chebyshev(Mean, Sd) UCL	23.46

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.55

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	7.341
Maximum	30.9	Median	2.545
SD	11.57	Std. Error of Mean	4.722
Coefficient of Variation	1.576	Skewness	2.427
Mean of logged Data	1.347	SD of logged Data	1.054

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.86	95% Adjusted-CLT UCL (Chen-1995)	20.11
		95% Modified-t UCL (Johnson-1978)	17.63

Nonparametric Distribution Free UCLs

95% CLT UCL	15.11	95% Jackknife UCL	16.86
95% Standard Bootstrap UCL	14.54	95% Bootstrap-t UCL	142.9
95% Hall's Bootstrap UCL	154.7	95% Percentile Bootstrap UCL	16.52
95% BCA Bootstrap UCL	17.43		
90% Chebyshev(Mean, Sd) UCL	21.51	95% Chebyshev(Mean, Sd) UCL	27.92
97.5% Chebyshev(Mean, Sd) UCL	36.83	99% Chebyshev(Mean, Sd) UCL	54.32

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.04	Mean	3.383
Maximum	4.23	Median	3.263
SD	0.425	Std. Error of Mean	0.174
Coefficient of Variation	0.126	Skewness	2.184
Mean of logged Data	1.213	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.732	95% Adjusted-CLT UCL (Chen-1995)	3.833
		95% Modified-t UCL (Johnson-1978)	3.758

Nonparametric Distribution Free UCLs

95% CLT UCL	3.668	95% Jackknife UCL	3.732
95% Standard Bootstrap UCL	3.648	95% Bootstrap-t UCL	5.009
95% Hall's Bootstrap UCL	5.287	95% Percentile Bootstrap UCL	3.703
95% BCA Bootstrap UCL	3.749		
90% Chebyshev(Mean, Sd) UCL	3.903	95% Chebyshev(Mean, Sd) UCL	4.139
97.5% Chebyshev(Mean, Sd) UCL	4.466	99% Chebyshev(Mean, Sd) UCL	5.109

Suggested UCL to Use

95% Student's-t UCL	3.732	or 95% Modified-t UCL	3.758

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	8.843
Maximum	37	Median	3.225
SD	13.87	Std. Error of Mean	5.662
Coefficient of Variation	1.568	Skewness	2.392
Mean of logged Data	1.496	SD of logged Data	1.12

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.25	95% Adjusted-CLT UCL (Chen-1995)	24.06

		95% Modified-t UCL (Johnson-1978)	21.17

Nonparametric Distribution Free UCLs

95% CLT UCL	18.16	95% Jackknife UCL	20.25
95% Standard Bootstrap UCL	17.4	95% Bootstrap-t UCL	82.65
95% Hall's Bootstrap UCL	78.95	95% Percentile Bootstrap UCL	19.54
95% BCA Bootstrap UCL	25.38		
90% Chebyshev(Mean, Sd) UCL	25.83	95% Chebyshev(Mean, Sd) UCL	33.52
97.5% Chebyshev(Mean, Sd) UCL	44.2	99% Chebyshev(Mean, Sd) UCL	65.18

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.215	Mean	1.285
Maximum	1.315	Median	1.293
SD	0.0365	Std. Error of Mean	0.0149
Coefficient of Variation	0.0284	Skewness	-1.837
Mean of logged Data	0.25	SD of logged Data	0.0289

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.315	95% Adjusted-CLT UCL (Chen-1995)	1.298
		95% Modified-t UCL (Johnson-1978)	1.313

Nonparametric Distribution Free UCLs

95% CLT UCL	1.309	95% Jackknife UCL	1.315
95% Standard Bootstrap UCL	1.308	95% Bootstrap-t UCL	1.305
95% Hall's Bootstrap UCL	1.301	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.303		
90% Chebyshev(Mean, Sd) UCL	1.33	95% Chebyshev(Mean, Sd) UCL	1.35
97.5% Chebyshev(Mean, Sd) UCL	1.378	99% Chebyshev(Mean, Sd) UCL	1.433

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.49	Mean	5.741
Maximum	19.1	Median	3.263
SD	6.552	Std. Error of Mean	2.675
Coefficient of Variation	1.141	Skewness	2.437
Mean of logged Data	1.422	SD of logged Data	0.756

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.13	95% Adjusted-CLT UCL (Chen-1995)	12.98
		95% Modified-t UCL (Johnson-1978)	11.57

Nonparametric Distribution Free UCLs

95% CLT UCL	10.14	95% Jackknife UCL	11.13
95% Standard Bootstrap UCL	9.748	95% Bootstrap-t UCL	147.9
95% Hall's Bootstrap UCL	96.25	95% Percentile Bootstrap UCL	11.05
95% BCA Bootstrap UCL	11.19		
90% Chebyshev(Mean, Sd) UCL	13.76	95% Chebyshev(Mean, Sd) UCL	17.4
97.5% Chebyshev(Mean, Sd) UCL	22.44	99% Chebyshev(Mean, Sd) UCL	32.35

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.91	Mean	2.447
Maximum	8.1	Median	1.403
SD	2.804	Std. Error of Mean	1.145
Coefficient of Variation	1.146	Skewness	2.319
Mean of logged Data	0.533	SD of logged Data	0.829

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.753	95% Adjusted-CLT UCL (Chen-1995)	5.487
		95% Modified-t UCL (Johnson-1978)	4.934

Nonparametric Distribution Free UCLs

95% CLT UCL	4.329	95% Jackknife UCL	4.753
95% Standard Bootstrap UCL	4.193	95% Bootstrap-t UCL	12.41
95% Hall's Bootstrap UCL	13.33	95% Percentile Bootstrap UCL	4.657
95% BCA Bootstrap UCL	4.831		
90% Chebyshev(Mean, Sd) UCL	5.881	95% Chebyshev(Mean, Sd) UCL	7.436
97.5% Chebyshev(Mean, Sd) UCL	9.595	99% Chebyshev(Mean, Sd) UCL	13.84

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.37	Mean	5.567
Maximum	18.5	Median	3.16
SD	6.345	Std. Error of Mean	2.59
Coefficient of Variation	1.14	Skewness	2.434
Mean of logged Data	1.39	SD of logged Data	0.758

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.79	95% Adjusted-CLT UCL (Chen-1995)	12.58
		95% Modified-t UCL (Johnson-1978)	11.22

Nonparametric Distribution Free UCLs

95% CLT UCL	9.827	95% Jackknife UCL	10.79
95% Standard Bootstrap UCL	9.438	95% Bootstrap-t UCL	100.3
95% Hall's Bootstrap UCL	62.78	95% Percentile Bootstrap UCL	10.7
95% BCA Bootstrap UCL	10.85		
90% Chebyshev(Mean, Sd) UCL	13.34	95% Chebyshev(Mean, Sd) UCL	16.86
97.5% Chebyshev(Mean, Sd) UCL	21.74	99% Chebyshev(Mean, Sd) UCL	31.34

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	16.86

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	3.04	Mean	10.05
Maximum	41.7	Median	3.545
SD	15.53	Std. Error of Mean	6.339
Coefficient of Variation	1.546	Skewness	2.436
Mean of logged Data	1.7	SD of logged Data	1.013

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.82	95% Adjusted-CLT UCL (Chen-1995)	27.21
		95% Modified-t UCL (Johnson-1978)	23.87

Nonparametric Distribution Free UCLs

95% CLT UCL	20.47	95% Jackknife UCL	22.82
95% Standard Bootstrap UCL	19.35	95% Bootstrap-t UCL	388
95% Hall's Bootstrap UCL	211	95% Percentile Bootstrap UCL	22.49
95% BCA Bootstrap UCL	28.85		
90% Chebyshev(Mean, Sd) UCL	29.06	95% Chebyshev(Mean, Sd) UCL	37.67
97.5% Chebyshev(Mean, Sd) UCL	49.63	99% Chebyshev(Mean, Sd) UCL	73.11

Suggested UCL to Use

95% Hall's Bootstrap UCL 211

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:41:26 PM
From File	38002M.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.3	Mean	11.73
Maximum	12.35	Median	11.6
SD	0.422	Std. Error of Mean	0.172
Coefficient of Variation	0.0359	Skewness	0.736
Mean of logged Data	2.462	SD of logged Data	0.0356

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.08	95% Adjusted-CLT UCL (Chen-1995)	12.07
		95% Modified-t UCL (Johnson-1978)	12.09

Nonparametric Distribution Free UCLs

95% CLT UCL	12.02	95% Jackknife UCL	12.08
95% Standard Bootstrap UCL	12	95% Bootstrap-t UCL	12.53
95% Hall's Bootstrap UCL	14.71	95% Percentile Bootstrap UCL	12
95% BCA Bootstrap UCL	12		
90% Chebyshev(Mean, Sd) UCL	12.25	95% Chebyshev(Mean, Sd) UCL	12.48
97.5% Chebyshev(Mean, Sd) UCL	12.81	99% Chebyshev(Mean, Sd) UCL	13.45

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.68	Mean	10.6
Maximum	11.3	Median	10.65
SD	0.663	Std. Error of Mean	0.271
Coefficient of Variation	0.0625	Skewness	-0.294
Mean of logged Data	2.359	SD of logged Data	0.063

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.14	95% Adjusted-CLT UCL (Chen-1995)	11.01
		95% Modified-t UCL (Johnson-1978)	11.14

Nonparametric Distribution Free UCLs

95% CLT UCL	11.04	95% Jackknife UCL	11.14
95% Standard Bootstrap UCL	11	95% Bootstrap-t UCL	11.13
95% Hall's Bootstrap UCL	10.9	95% Percentile Bootstrap UCL	11.01
95% BCA Bootstrap UCL	10.98		
90% Chebyshev(Mean, Sd) UCL	11.41	95% Chebyshev(Mean, Sd) UCL	11.78
97.5% Chebyshev(Mean, Sd) UCL	12.29	99% Chebyshev(Mean, Sd) UCL	13.29

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	42	Mean	45.27
Maximum	50.9	Median	43.4
SD	3.863	Std. Error of Mean	1.577
Coefficient of Variation	0.0853	Skewness	0.924
Mean of logged Data	3.81	SD of logged Data	0.0834

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.44	95% Adjusted-CLT UCL (Chen-1995)	48.5
		95% Modified-t UCL (Johnson-1978)	48.54

Nonparametric Distribution Free UCLs

95% CLT UCL	47.86	95% Jackknife UCL	48.44
95% Standard Bootstrap UCL	47.66	95% Bootstrap-t UCL	58.24
95% Hall's Bootstrap UCL	69.24	95% Percentile Bootstrap UCL	47.83
95% BCA Bootstrap UCL	47.92		
90% Chebyshev(Mean, Sd) UCL	50	95% Chebyshev(Mean, Sd) UCL	52.14
97.5% Chebyshev(Mean, Sd) UCL	55.12	99% Chebyshev(Mean, Sd) UCL	60.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.778	Mean	0.923
Maximum	0.985	Median	0.948
SD	0.0748	Std. Error of Mean	0.0306
Coefficient of Variation	0.0811	Skewness	-1.931
Mean of logged Data	-0.0831	SD of logged Data	0.0859

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.985	95% Adjusted-CLT UCL (Chen-1995)	0.948
		95% Modified-t UCL (Johnson-1978)	0.981

Nonparametric Distribution Free UCLs

95% CLT UCL	0.973	95% Jackknife UCL	0.985
95% Standard Bootstrap UCL	0.968	95% Bootstrap-t UCL	0.965
95% Hall's Bootstrap UCL	0.954	95% Percentile Bootstrap UCL	0.963
95% BCA Bootstrap UCL	0.957		
90% Chebyshev(Mean, Sd) UCL	1.015	95% Chebyshev(Mean, Sd) UCL	1.056
97.5% Chebyshev(Mean, Sd) UCL	1.114	99% Chebyshev(Mean, Sd) UCL	1.227

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.488	Mean	0.507
Maximum	0.525	Median	0.508
SD	0.0131	Std. Error of Mean	0.00533
Coefficient of Variation	0.0258	Skewness	-0.167
Mean of logged Data	-0.68	SD of logged Data	0.0258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.518	95% Adjusted-CLT UCL (Chen-1995)	0.515
		95% Modified-t UCL (Johnson-1978)	0.518

Nonparametric Distribution Free UCLs

95% CLT UCL	0.516	95% Jackknife UCL	0.518
95% Standard Bootstrap UCL	0.515	95% Bootstrap-t UCL	0.517
95% Hall's Bootstrap UCL	0.516	95% Percentile Bootstrap UCL	0.515
95% BCA Bootstrap UCL	0.514		
90% Chebyshev(Mean, Sd) UCL	0.523	95% Chebyshev(Mean, Sd) UCL	0.53
97.5% Chebyshev(Mean, Sd) UCL	0.54	99% Chebyshev(Mean, Sd) UCL	0.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	2.057
Maximum	2.135	Median	2.053
SD	0.0545	Std. Error of Mean	0.0222
Coefficient of Variation	0.0265	Skewness	0.0939
Mean of logged Data	0.721	SD of logged Data	0.0265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.101	95% Adjusted-CLT UCL (Chen-1995)	2.094
		95% Modified-t UCL (Johnson-1978)	2.102

Nonparametric Distribution Free UCLs

95% CLT UCL	2.093	95% Jackknife UCL	2.101
95% Standard Bootstrap UCL	2.09	95% Bootstrap-t UCL	2.104
95% Hall's Bootstrap UCL	2.11	95% Percentile Bootstrap UCL	2.09
95% BCA Bootstrap UCL	2.092		
90% Chebyshev(Mean, Sd) UCL	2.123	95% Chebyshev(Mean, Sd) UCL	2.154

97.5% Chebyshev(Mean, Sd) UCL	2.196	99% Chebyshev(Mean, Sd) UCL	2.278

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	2.043
Maximum	2.135	Median	2.033
SD	0.0535	Std. Error of Mean	0.0219
Coefficient of Variation	0.0262	Skewness	1.014
Mean of logged Data	0.714	SD of logged Data	0.026

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.087	95% Adjusted-CLT UCL (Chen-1995)	2.088
		95% Modified-t UCL (Johnson-1978)	2.088

Nonparametric Distribution Free UCLs

95% CLT UCL	2.078	95% Jackknife UCL	2.087
95% Standard Bootstrap UCL	2.075	95% Bootstrap-t UCL	2.112
95% Hall's Bootstrap UCL	2.307	95% Percentile Bootstrap UCL	2.077
95% BCA Bootstrap UCL	2.082		
90% Chebyshev(Mean, Sd) UCL	2.108	95% Chebyshev(Mean, Sd) UCL	2.138
97.5% Chebyshev(Mean, Sd) UCL	2.179	99% Chebyshev(Mean, Sd) UCL	2.26

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.45	Mean	2.397
Maximum	3.67	Median	2.275
SD	0.873	Std. Error of Mean	0.357
Coefficient of Variation	0.364	Skewness	0.418
Mean of logged Data	0.818	SD of logged Data	0.368

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.115	95% Adjusted-CLT UCL (Chen-1995)	3.048
		95% Modified-t UCL (Johnson-1978)	3.125

Nonparametric Distribution Free UCLs

95% CLT UCL	2.983	95% Jackknife UCL	3.115
95% Standard Bootstrap UCL	2.928	95% Bootstrap-t UCL	3.243
95% Hall's Bootstrap UCL	2.828	95% Percentile Bootstrap UCL	2.917
95% BCA Bootstrap UCL	2.967		
90% Chebyshev(Mean, Sd) UCL	3.466	95% Chebyshev(Mean, Sd) UCL	3.951
97.5% Chebyshev(Mean, Sd) UCL	4.623	99% Chebyshev(Mean, Sd) UCL	5.944

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.045	Mean	3.342
Maximum	4.06	Median	3.213
SD	0.385	Std. Error of Mean	0.157
Coefficient of Variation	0.115	Skewness	1.658
Mean of logged Data	1.201	SD of logged Data	0.109

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.658	95% Adjusted-CLT UCL (Chen-1995)	3.714
		95% Modified-t UCL (Johnson-1978)	3.676

Nonparametric Distribution Free UCLs

95% CLT UCL	3.6	95% Jackknife UCL	3.658
95% Standard Bootstrap UCL	3.574	95% Bootstrap-t UCL	4.021
95% Hall's Bootstrap UCL	4.633	95% Percentile Bootstrap UCL	3.602
95% BCA Bootstrap UCL	3.693		
90% Chebyshev(Mean, Sd) UCL	3.813	95% Chebyshev(Mean, Sd) UCL	4.027
97.5% Chebyshev(Mean, Sd) UCL	4.323	99% Chebyshev(Mean, Sd) UCL	4.906

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.045	Mean	3.165
Maximum	3.285	Median	3.16
SD	0.0846	Std. Error of Mean	0.0345
Coefficient of Variation	0.0267	Skewness	0.0391
Mean of logged Data	1.152	SD of logged Data	0.0267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.235	95% Adjusted-CLT UCL (Chen-1995)	3.222
		95% Modified-t UCL (Johnson-1978)	3.235

Nonparametric Distribution Free UCLs

95% CLT UCL	3.222	95% Jackknife UCL	3.235
95% Standard Bootstrap UCL	3.217	95% Bootstrap-t UCL	3.24
95% Hall's Bootstrap UCL	3.235	95% Percentile Bootstrap UCL	3.215
95% BCA Bootstrap UCL	3.218		
90% Chebyshev(Mean, Sd) UCL	3.269	95% Chebyshev(Mean, Sd) UCL	3.315
97.5% Chebyshev(Mean, Sd) UCL	3.381	99% Chebyshev(Mean, Sd) UCL	3.508

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	2.057
Maximum	2.135	Median	2.053
SD	0.0545	Std. Error of Mean	0.0222
Coefficient of Variation	0.0265	Skewness	0.0939
Mean of logged Data	0.721	SD of logged Data	0.0265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.101	95% Adjusted-CLT UCL (Chen-1995)	2.094
		95% Modified-t UCL (Johnson-1978)	2.102

Nonparametric Distribution Free UCLs

95% CLT UCL	2.093	95% Jackknife UCL	2.101
95% Standard Bootstrap UCL	2.09	95% Bootstrap-t UCL	2.106
95% Hall's Bootstrap UCL	2.107	95% Percentile Bootstrap UCL	2.089
95% BCA Bootstrap UCL	2.092		
90% Chebyshev(Mean, Sd) UCL	2.123	95% Chebyshev(Mean, Sd) UCL	2.154
97.5% Chebyshev(Mean, Sd) UCL	2.196	99% Chebyshev(Mean, Sd) UCL	2.278

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	2.369
Maximum	3	Median	2.293
SD	0.394	Std. Error of Mean	0.161
Coefficient of Variation	0.166	Skewness	0.774
Mean of logged Data	0.851	SD of logged Data	0.162

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.693	95% Adjusted-CLT UCL (Chen-1995)	2.688
		95% Modified-t UCL (Johnson-1978)	2.702

Nonparametric Distribution Free UCLs

95% CLT UCL	2.634	95% Jackknife UCL	2.693
95% Standard Bootstrap UCL	2.612	95% Bootstrap-t UCL	2.758
95% Hall's Bootstrap UCL	2.642	95% Percentile Bootstrap UCL	2.618
95% BCA Bootstrap UCL	2.66		
90% Chebyshev(Mean, Sd) UCL	2.852	95% Chebyshev(Mean, Sd) UCL	3.071
97.5% Chebyshev(Mean, Sd) UCL	3.374	99% Chebyshev(Mean, Sd) UCL	3.971

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.045	Mean	3.165
Maximum	3.285	Median	3.16
SD	0.0846	Std. Error of Mean	0.0345
Coefficient of Variation	0.0267	Skewness	0.0391
Mean of logged Data	1.152	SD of logged Data	0.0267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.235	95% Adjusted-CLT UCL (Chen-1995)	3.222
		95% Modified-t UCL (Johnson-1978)	3.235

Nonparametric Distribution Free UCLs

95% CLT UCL	3.222	95% Jackknife UCL	3.235
95% Standard Bootstrap UCL	3.216	95% Bootstrap-t UCL	3.237
95% Hall's Bootstrap UCL	3.238	95% Percentile Bootstrap UCL	3.219
95% BCA Bootstrap UCL	3.216		
90% Chebyshev(Mean, Sd) UCL	3.269	95% Chebyshev(Mean, Sd) UCL	3.315
97.5% Chebyshev(Mean, Sd) UCL	3.381	99% Chebyshev(Mean, Sd) UCL	3.508

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	3.065
Maximum	4.62	Median	2.77
SD	1.04	Std. Error of Mean	0.425
Coefficient of Variation	0.339	Skewness	0.64
Mean of logged Data	1.073	SD of logged Data	0.333

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.921	95% Adjusted-CLT UCL (Chen-1995)	3.882
		95% Modified-t UCL (Johnson-1978)	3.939

Nonparametric Distribution Free UCLs

95% CLT UCL	3.763	95% Jackknife UCL	3.921
95% Standard Bootstrap UCL	3.698	95% Bootstrap-t UCL	4.751
95% Hall's Bootstrap UCL	4.001	95% Percentile Bootstrap UCL	3.748
95% BCA Bootstrap UCL	3.777		
90% Chebyshev(Mean, Sd) UCL	4.339	95% Chebyshev(Mean, Sd) UCL	4.916
97.5% Chebyshev(Mean, Sd) UCL	5.717	99% Chebyshev(Mean, Sd) UCL	7.29

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.22	Mean	1.266
Maximum	1.315	Median	1.263
SD	0.0337	Std. Error of Mean	0.0137
Coefficient of Variation	0.0266	Skewness	0.208
Mean of logged Data	0.235	SD of logged Data	0.0266

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.294	95% Adjusted-CLT UCL (Chen-1995)	1.29
		95% Modified-t UCL (Johnson-1978)	1.294

Nonparametric Distribution Free UCLs

95% CLT UCL	1.288	95% Jackknife UCL	1.294
95% Standard Bootstrap UCL	1.286	95% Bootstrap-t UCL	1.298
95% Hall's Bootstrap UCL	1.299	95% Percentile Bootstrap UCL	1.286
95% BCA Bootstrap UCL	1.287		
90% Chebyshev(Mean, Sd) UCL	1.307	95% Chebyshev(Mean, Sd) UCL	1.326
97.5% Chebyshev(Mean, Sd) UCL	1.352	99% Chebyshev(Mean, Sd) UCL	1.403

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.12	Mean	2.883
Maximum	3.285	Median	3.093
SD	0.458	Std. Error of Mean	0.187
Coefficient of Variation	0.159	Skewness	-1.177
Mean of logged Data	1.047	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.26	95% Adjusted-CLT UCL (Chen-1995)	3.095
		95% Modified-t UCL (Johnson-1978)	3.245

Nonparametric Distribution Free UCLs

95% CLT UCL	3.191	95% Jackknife UCL	3.26
95% Standard Bootstrap UCL	3.165	95% Bootstrap-t UCL	3.157
95% Hall's Bootstrap UCL	3.076	95% Percentile Bootstrap UCL	3.163
95% BCA Bootstrap UCL	3.118		
90% Chebyshev(Mean, Sd) UCL	3.444	95% Chebyshev(Mean, Sd) UCL	3.698
97.5% Chebyshev(Mean, Sd) UCL	4.051	99% Chebyshev(Mean, Sd) UCL	4.744

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.931	Mean	1.279
Maximum	1.8	Median	1.09
SD	0.401	Std. Error of Mean	0.164
Coefficient of Variation	0.313	Skewness	0.863
Mean of logged Data	0.208	SD of logged Data	0.296

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1.609	95% Adjusted-CLT UCL (Chen-1995)	1.61
		95% Modified-t UCL (Johnson-1978)	1.618

Nonparametric Distribution Free UCLs

95% CLT UCL	1.548	95% Jackknife UCL	1.609
95% Standard Bootstrap UCL	1.527	95% Bootstrap-t UCL	2.7
95% Hall's Bootstrap UCL	4.371	95% Percentile Bootstrap UCL	1.539
95% BCA Bootstrap UCL	1.553		
90% Chebyshev(Mean, Sd) UCL	1.77	95% Chebyshev(Mean, Sd) UCL	1.992
97.5% Chebyshev(Mean, Sd) UCL	2.301	99% Chebyshev(Mean, Sd) UCL	2.906

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.21	Mean	2.996
Maximum	3.285	Median	3.128
SD	0.393	Std. Error of Mean	0.16
Coefficient of Variation	0.131	Skewness	-2.223
Mean of logged Data	1.089	SD of logged Data	0.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.319	95% Adjusted-CLT UCL (Chen-1995)	3.104
		95% Modified-t UCL (Johnson-1978)	3.295

Nonparametric Distribution Free UCLs

95% CLT UCL	3.26	95% Jackknife UCL	3.319
95% Standard Bootstrap UCL	3.239	95% Bootstrap-t UCL	3.205
95% Hall's Bootstrap UCL	3.145	95% Percentile Bootstrap UCL	3.187
95% BCA Bootstrap UCL	3.171		
90% Chebyshev(Mean, Sd) UCL	3.477	95% Chebyshev(Mean, Sd) UCL	3.695
97.5% Chebyshev(Mean, Sd) UCL	3.998	99% Chebyshev(Mean, Sd) UCL	4.592

Suggested UCL to Use

95% Student's-t UCL	3.319	or 95% Modified-t UCL	3.295

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.09	Mean	3.001
Maximum	4.23	Median	3.013
SD	0.799	Std. Error of Mean	0.326
Coefficient of Variation	0.266	Skewness	0.402
Mean of logged Data	1.069	SD of logged Data	0.268

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.658	95% Adjusted-CLT UCL (Chen-1995)	3.595
		95% Modified-t UCL (Johnson-1978)	3.667

Nonparametric Distribution Free UCLs

95% CLT UCL	3.538	95% Jackknife UCL	3.658
95% Standard Bootstrap UCL	3.485	95% Bootstrap-t UCL	3.691
95% Hall's Bootstrap UCL	3.711	95% Percentile Bootstrap UCL	3.486
95% BCA Bootstrap UCL	3.498		
90% Chebyshev(Mean, Sd) UCL	3.98	95% Chebyshev(Mean, Sd) UCL	4.423
97.5% Chebyshev(Mean, Sd) UCL	5.039	99% Chebyshev(Mean, Sd) UCL	6.248

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:42:40 PM
From File	38002N.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.9	Mean	14.45
Maximum	16	Median	14.4
SD	1.261	Std. Error of Mean	0.515
Coefficient of Variation	0.0873	Skewness	0.0381
Mean of logged Data	2.668	SD of logged Data	0.0875

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.49	95% Adjusted-CLT UCL (Chen-1995)	15.31
		95% Modified-t UCL (Johnson-1978)	15.49

Nonparametric Distribution Free UCLs

95% CLT UCL	15.3	95% Jackknife UCL	15.49
95% Standard Bootstrap UCL	15.21	95% Bootstrap-t UCL	15.42
95% Hall's Bootstrap UCL	15.13	95% Percentile Bootstrap UCL	15.23
95% BCA Bootstrap UCL	15.2		
90% Chebyshev(Mean, Sd) UCL	15.99	95% Chebyshev(Mean, Sd) UCL	16.69
97.5% Chebyshev(Mean, Sd) UCL	17.67	99% Chebyshev(Mean, Sd) UCL	19.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.6	Mean	13.1
Maximum	15.5	Median	12.8
SD	1.531	Std. Error of Mean	0.625
Coefficient of Variation	0.117	Skewness	0.689
Mean of logged Data	2.567	SD of logged Data	0.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.36	95% Adjusted-CLT UCL (Chen-1995)	14.32
		95% Modified-t UCL (Johnson-1978)	14.39

Nonparametric Distribution Free UCLs

95% CLT UCL	14.13	95% Jackknife UCL	14.36
95% Standard Bootstrap UCL	14.06	95% Bootstrap-t UCL	15.07
95% Hall's Bootstrap UCL	13.97	95% Percentile Bootstrap UCL	14.08
95% BCA Bootstrap UCL	14.12		
90% Chebyshev(Mean, Sd) UCL	14.98	95% Chebyshev(Mean, Sd) UCL	15.82
97.5% Chebyshev(Mean, Sd) UCL	17	99% Chebyshev(Mean, Sd) UCL	19.32

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	50.3	Mean	52.58
Maximum	54.8	Median	52.45
SD	1.528	Std. Error of Mean	0.624
Coefficient of Variation	0.0291	Skewness	-0.0242
Mean of logged Data	3.962	SD of logged Data	0.0291

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.84	95% Adjusted-CLT UCL (Chen-1995)	53.6
		95% Modified-t UCL (Johnson-1978)	53.84

Nonparametric Distribution Free UCLs

95% CLT UCL	53.61	95% Jackknife UCL	53.84
95% Standard Bootstrap UCL	53.53	95% Bootstrap-t UCL	54.11
95% Hall's Bootstrap UCL	54.36	95% Percentile Bootstrap UCL	53.47
95% BCA Bootstrap UCL	53.52		
90% Chebyshev(Mean, Sd) UCL	54.45	95% Chebyshev(Mean, Sd) UCL	55.3
97.5% Chebyshev(Mean, Sd) UCL	56.48	99% Chebyshev(Mean, Sd) UCL	58.79

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.915	Mean	1.084
Maximum	1.63	Median	0.987
SD	0.27	Std. Error of Mean	0.11
Coefficient of Variation	0.249	Skewness	2.368
Mean of logged Data	0.0595	SD of logged Data	0.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.306	95% Adjusted-CLT UCL (Chen-1995)	1.378
		95% Modified-t UCL (Johnson-1978)	1.323

Nonparametric Distribution Free UCLs

95% CLT UCL	1.265	95% Jackknife UCL	1.306
95% Standard Bootstrap UCL	1.25	95% Bootstrap-t UCL	2.841
95% Hall's Bootstrap UCL	2.487	95% Percentile Bootstrap UCL	1.298
95% BCA Bootstrap UCL	1.309		
90% Chebyshev(Mean, Sd) UCL	1.414	95% Chebyshev(Mean, Sd) UCL	1.563
97.5% Chebyshev(Mean, Sd) UCL	1.771	99% Chebyshev(Mean, Sd) UCL	2.179

Suggested UCL to Use

95% Student's-t UCL	1.306	or 95% Modified-t UCL	1.323

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.488	Mean	2.328
Maximum	11.2	Median	0.525
SD	4.347	Std. Error of Mean	1.775
Coefficient of Variation	1.868	Skewness	2.448
Mean of logged Data	-0.0989	SD of logged Data	1.239

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.904	95% Adjusted-CLT UCL (Chen-1995)	7.142
		95% Modified-t UCL (Johnson-1978)	6.199

Nonparametric Distribution Free UCLs

95% CLT UCL	5.247	95% Jackknife UCL	5.904
95% Standard Bootstrap UCL	4.985	95% Bootstrap-t UCL	477.1
95% Hall's Bootstrap UCL	225.5	95% Percentile Bootstrap UCL	5.855
95% BCA Bootstrap UCL	5.924		
90% Chebyshev(Mean, Sd) UCL	7.652	95% Chebyshev(Mean, Sd) UCL	10.06
97.5% Chebyshev(Mean, Sd) UCL	13.41	99% Chebyshev(Mean, Sd) UCL	19.99

Suggested UCL to Use

95% Hall's Bootstrap UCL	225.5

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.93	Mean	5.329
Maximum	21.7	Median	2.105
SD	8.02	Std. Error of Mean	3.274
Coefficient of Variation	1.505	Skewness	2.449
Mean of logged Data	1.112	SD of logged Data	0.964

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.93	95% Adjusted-CLT UCL (Chen-1995)	14.21
		95% Modified-t UCL (Johnson-1978)	12.47

Nonparametric Distribution Free UCLs

95% CLT UCL	10.71	95% Jackknife UCL	11.93
95% Standard Bootstrap UCL	10.12	95% Bootstrap-t UCL	411.1
95% Hall's Bootstrap UCL	317.9	95% Percentile Bootstrap UCL	11.85
95% BCA Bootstrap UCL	11.91		
90% Chebyshev(Mean, Sd) UCL	15.15	95% Chebyshev(Mean, Sd) UCL	19.6
97.5% Chebyshev(Mean, Sd) UCL	25.78	99% Chebyshev(Mean, Sd) UCL	37.91

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	10.14
Maximum	45.9	Median	2.743
SD	17.57	Std. Error of Mean	7.171
Coefficient of Variation	1.732	Skewness	2.421
Mean of logged Data	1.485	SD of logged Data	1.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.59	95% Adjusted-CLT UCL (Chen-1995)	29.51
		95% Modified-t UCL (Johnson-1978)	25.77

Nonparametric Distribution Free UCLs

95% CLT UCL	21.94	95% Jackknife UCL	24.59
95% Standard Bootstrap UCL	20.88	95% Bootstrap-t UCL	220.3
95% Hall's Bootstrap UCL	113.3	95% Percentile Bootstrap UCL	24.17
95% BCA Bootstrap UCL	31.29		
90% Chebyshev(Mean, Sd) UCL	31.65	95% Chebyshev(Mean, Sd) UCL	41.4
97.5% Chebyshev(Mean, Sd) UCL	54.92	99% Chebyshev(Mean, Sd) UCL	81.49

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.57	Mean	9.75
Maximum	44.2	Median	2.105
SD	16.98	Std. Error of Mean	6.931
Coefficient of Variation	1.741	Skewness	2.387
Mean of logged Data	1.382	SD of logged Data	1.281

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.72	95% Adjusted-CLT UCL (Chen-1995)	28.37
		95% Modified-t UCL (Johnson-1978)	24.84

Nonparametric Distribution Free UCLs

95% CLT UCL	21.15	95% Jackknife UCL	23.72
95% Standard Bootstrap UCL	19.99	95% Bootstrap-t UCL	612.7
95% Hall's Bootstrap UCL	610.9	95% Percentile Bootstrap UCL	22.95
95% BCA Bootstrap UCL	23.89		
90% Chebyshev(Mean, Sd) UCL	30.54	95% Chebyshev(Mean, Sd) UCL	39.96
97.5% Chebyshev(Mean, Sd) UCL	53.04	99% Chebyshev(Mean, Sd) UCL	78.72

Suggested UCL to Use

95% Hall's Bootstrap UCL	610.9

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.045	Mean	13.55
Maximum	55.2	Median	4.983
SD	20.58	Std. Error of Mean	8.401
Coefficient of Variation	1.518	Skewness	2.36
Mean of logged Data	1.948	SD of logged Data	1.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.48	95% Adjusted-CLT UCL (Chen-1995)	36.02
		95% Modified-t UCL (Johnson-1978)	31.83

Nonparametric Distribution Free UCLs

95% CLT UCL	27.37	95% Jackknife UCL	30.48
95% Standard Bootstrap UCL	26.14	95% Bootstrap-t UCL	121.8
95% Hall's Bootstrap UCL	100.6	95% Percentile Bootstrap UCL	29.2
95% BCA Bootstrap UCL	30.89		
90% Chebyshev(Mean, Sd) UCL	38.75	95% Chebyshev(Mean, Sd) UCL	50.17
97.5% Chebyshev(Mean, Sd) UCL	66.01	99% Chebyshev(Mean, Sd) UCL	97.14

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.045	Mean	6.733
Maximum	22.6	Median	3.333
SD	7.8	Std. Error of Mean	3.184
Coefficient of Variation	1.159	Skewness	2.413
Mean of logged Data	1.566	SD of logged Data	0.778

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.15	95% Adjusted-CLT UCL (Chen-1995)	15.32
		95% Modified-t UCL (Johnson-1978)	13.67

Nonparametric Distribution Free UCLs

95% CLT UCL	11.97	95% Jackknife UCL	13.15
95% Standard Bootstrap UCL	11.6	95% Bootstrap-t UCL	212.5
95% Hall's Bootstrap UCL	132.4	95% Percentile Bootstrap UCL	12.91
95% BCA Bootstrap UCL	13.45		
90% Chebyshev(Mean, Sd) UCL	16.29	95% Chebyshev(Mean, Sd) UCL	20.61
97.5% Chebyshev(Mean, Sd) UCL	26.62	99% Chebyshev(Mean, Sd) UCL	38.42

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	20.61

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	6.46
Maximum	24.7	Median	2.573
SD	8.999	Std. Error of Mean	3.674
Coefficient of Variation	1.393	Skewness	2.375
Mean of logged Data	1.346	SD of logged Data	0.97

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.86	95% Adjusted-CLT UCL (Chen-1995)	16.31
		95% Modified-t UCL (Johnson-1978)	14.46

Nonparametric Distribution Free UCLs

95% CLT UCL	12.5	95% Jackknife UCL	13.86
95% Standard Bootstrap UCL	12.06	95% Bootstrap-t UCL	105.7
95% Hall's Bootstrap UCL	98.6	95% Percentile Bootstrap UCL	13.51
95% BCA Bootstrap UCL	14.15		
90% Chebyshev(Mean, Sd) UCL	17.48	95% Chebyshev(Mean, Sd) UCL	22.47
97.5% Chebyshev(Mean, Sd) UCL	29.4	99% Chebyshev(Mean, Sd) UCL	43.01

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	10.01
Maximum	42.2	Median	3.468
SD	15.89	Std. Error of Mean	6.487
Coefficient of Variation	1.588	Skewness	2.371
Mean of logged Data	1.571	SD of logged Data	1.179

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.08	95% Adjusted-CLT UCL (Chen-1995)	27.38
		95% Modified-t UCL (Johnson-1978)	24.12

Nonparametric Distribution Free UCLs

95% CLT UCL	20.68	95% Jackknife UCL	23.08
95% Standard Bootstrap UCL	19.94	95% Bootstrap-t UCL	115.7
95% Hall's Bootstrap UCL	117.8	95% Percentile Bootstrap UCL	22.59
95% BCA Bootstrap UCL	23.49		
90% Chebyshev(Mean, Sd) UCL	29.47	95% Chebyshev(Mean, Sd) UCL	38.28
97.5% Chebyshev(Mean, Sd) UCL	50.52	99% Chebyshev(Mean, Sd) UCL	74.55

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.97	Mean	3.761
Maximum	6.76	Median	3.238
SD	1.475	Std. Error of Mean	0.602
Coefficient of Variation	0.392	Skewness	2.406
Mean of logged Data	1.277	SD of logged Data	0.313

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.974	95% Adjusted-CLT UCL (Chen-1995)	5.383
		95% Modified-t UCL (Johnson-1978)	5.073

Nonparametric Distribution Free UCLs

95% CLT UCL	4.751	95% Jackknife UCL	4.974
95% Standard Bootstrap UCL	4.654	95% Bootstrap-t UCL	12.4
95% Hall's Bootstrap UCL	13.39	95% Percentile Bootstrap UCL	4.878
95% BCA Bootstrap UCL	5.012		
90% Chebyshev(Mean, Sd) UCL	5.567	95% Chebyshev(Mean, Sd) UCL	6.386
97.5% Chebyshev(Mean, Sd) UCL	7.522	99% Chebyshev(Mean, Sd) UCL	9.753

Suggested UCL to Use

95% Student's-t UCL	4.974	or 95% Modified-t UCL	5.073

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2	Mean	21.79
Maximum	104	Median	5.48
SD	40.44	Std. Error of Mean	16.51
Coefficient of Variation	1.856	Skewness	2.407
Mean of logged Data	1.982	SD of logged Data	1.468

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	55.05	95% Adjusted-CLT UCL (Chen-1995)	66.27
		95% Modified-t UCL (Johnson-1978)	57.75

Nonparametric Distribution Free UCLs

95% CLT UCL	48.94	95% Jackknife UCL	55.05
95% Standard Bootstrap UCL	47.07	95% Bootstrap-t UCL	399.9
95% Hall's Bootstrap UCL	228.6	95% Percentile Bootstrap UCL	54.51
95% BCA Bootstrap UCL	70.03		
90% Chebyshev(Mean, Sd) UCL	71.31	95% Chebyshev(Mean, Sd) UCL	93.74
97.5% Chebyshev(Mean, Sd) UCL	124.9	99% Chebyshev(Mean, Sd) UCL	186

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.19	Mean	2.788
Maximum	10.4	Median	1.298
SD	3.729	Std. Error of Mean	1.522
Coefficient of Variation	1.337	Skewness	2.448
Mean of logged Data	0.586	SD of logged Data	0.861

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.856	95% Adjusted-CLT UCL (Chen-1995)	6.919
		95% Modified-t UCL (Johnson-1978)	6.11

Nonparametric Distribution Free UCLs

95% CLT UCL	5.293	95% Jackknife UCL	5.856
95% Standard Bootstrap UCL	5.096	95% Bootstrap-t UCL	142.2
95% Hall's Bootstrap UCL	120.4	95% Percentile Bootstrap UCL	5.822
95% BCA Bootstrap UCL	5.851		
90% Chebyshev(Mean, Sd) UCL	7.356	95% Chebyshev(Mean, Sd) UCL	9.425
97.5% Chebyshev(Mean, Sd) UCL	12.3	99% Chebyshev(Mean, Sd) UCL	17.94

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.425

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.045	Mean	8.194
Maximum	29.5	Median	3.678
SD	10.49	Std. Error of Mean	4.284
Coefficient of Variation	1.281	Skewness	2.392
Mean of logged Data	1.678	SD of logged Data	0.872

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.83	95% Adjusted-CLT UCL (Chen-1995)	19.71
		95% Modified-t UCL (Johnson-1978)	17.52

Nonparametric Distribution Free UCLs

95% CLT UCL	15.24	95% Jackknife UCL	16.83
95% Standard Bootstrap UCL	14.57	95% Bootstrap-t UCL	131.2
95% Hall's Bootstrap UCL	70.33	95% Percentile Bootstrap UCL	16.47
95% BCA Bootstrap UCL	17.76		
90% Chebyshev(Mean, Sd) UCL	21.05	95% Chebyshev(Mean, Sd) UCL	26.87
97.5% Chebyshev(Mean, Sd) UCL	34.95	99% Chebyshev(Mean, Sd) UCL	50.82

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.915	Mean	1.808
Maximum	2.81	Median	1.703
SD	0.937	Std. Error of Mean	0.382
Coefficient of Variation	0.518	Skewness	0.0777
Mean of logged Data	0.467	SD of logged Data	0.558

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.578	95% Adjusted-CLT UCL (Chen-1995)	2.449

		95% Modified-t UCL (Johnson-1978)	2.58

Nonparametric Distribution Free UCLs

95% CLT UCL	2.437	95% Jackknife UCL	2.578
95% Standard Bootstrap UCL	2.387	95% Bootstrap-t UCL	2.531
95% Hall's Bootstrap UCL	2.132	95% Percentile Bootstrap UCL	2.406
95% BCA Bootstrap UCL	2.404		
90% Chebyshev(Mean, Sd) UCL	2.955	95% Chebyshev(Mean, Sd) UCL	3.474
97.5% Chebyshev(Mean, Sd) UCL	4.196	99% Chebyshev(Mean, Sd) UCL	5.613

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.045	Mean	20.2
Maximum	99.7	Median	4.038
SD	38.98	Std. Error of Mean	15.91
Coefficient of Variation	1.93	Skewness	2.441
Mean of logged Data	1.934	SD of logged Data	1.347

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.26	95% Adjusted-CLT UCL (Chen-1995)	63.31
		95% Modified-t UCL (Johnson-1978)	54.9

Nonparametric Distribution Free UCLs

95% CLT UCL	46.37	95% Jackknife UCL	52.26
95% Standard Bootstrap UCL	44.68	95% Bootstrap-t UCL	833.6
95% Hall's Bootstrap UCL	428.7	95% Percentile Bootstrap UCL	51.68
95% BCA Bootstrap UCL	67.55		
90% Chebyshev(Mean, Sd) UCL	67.94	95% Chebyshev(Mean, Sd) UCL	89.56
97.5% Chebyshev(Mean, Sd) UCL	119.6	99% Chebyshev(Mean, Sd) UCL	178.5

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.9	Mean	18.66
Maximum	87	Median	4.618
SD	33.58	Std. Error of Mean	13.71
Coefficient of Variation	1.8	Skewness	2.416
Mean of logged Data	1.984	SD of logged Data	1.305

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.29	95% Adjusted-CLT UCL (Chen-1995)	55.66
		95% Modified-t UCL (Johnson-1978)	48.54

Nonparametric Distribution Free UCLs

95% CLT UCL	41.21	95% Jackknife UCL	46.29
95% Standard Bootstrap UCL	39.24	95% Bootstrap-t UCL	440.3
95% Hall's Bootstrap UCL	198.9	95% Percentile Bootstrap UCL	45.11
95% BCA Bootstrap UCL	58.99		
90% Chebyshev(Mean, Sd) UCL	59.79	95% Chebyshev(Mean, Sd) UCL	78.42
97.5% Chebyshev(Mean, Sd) UCL	104.3	99% Chebyshev(Mean, Sd) UCL	155.1

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:43:53 PM
From File	38002O.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	13.1	Mean	30.9
Maximum	104	Median	17
SD	35.85	Std. Error of Mean	14.63
Coefficient of Variation	1.16	Skewness	2.438
Mean of logged Data	3.095	SD of logged Data	0.767

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	60.39	95% Adjusted-CLT UCL (Chen-1995)	70.54
		95% Modified-t UCL (Johnson-1978)	62.82

Nonparametric Distribution Free UCLs

95% CLT UCL	54.97	95% Jackknife UCL	60.39
95% Standard Bootstrap UCL	53.65	95% Bootstrap-t UCL	2272
95% Hall's Bootstrap UCL	1306	95% Percentile Bootstrap UCL	59.83
95% BCA Bootstrap UCL	60.55		
90% Chebyshev(Mean, Sd) UCL	74.8	95% Chebyshev(Mean, Sd) UCL	94.69
97.5% Chebyshev(Mean, Sd) UCL	122.3	99% Chebyshev(Mean, Sd) UCL	176.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	94.69

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.5	Mean	13.65
Maximum	18.2	Median	12.8
SD	2.236	Std. Error of Mean	0.913
Coefficient of Variation	0.164	Skewness	2.416
Mean of logged Data	2.604	SD of logged Data	0.146

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.49	95% Adjusted-CLT UCL (Chen-1995)	16.11
		95% Modified-t UCL (Johnson-1978)	15.64

Nonparametric Distribution Free UCLs

95% CLT UCL	15.15	95% Jackknife UCL	15.49
95% Standard Bootstrap UCL	15.06	95% Bootstrap-t UCL	29.91
95% Hall's Bootstrap UCL	26.36	95% Percentile Bootstrap UCL	15.43
95% BCA Bootstrap UCL	15.53		
90% Chebyshev(Mean, Sd) UCL	16.39	95% Chebyshev(Mean, Sd) UCL	17.63
97.5% Chebyshev(Mean, Sd) UCL	19.35	99% Chebyshev(Mean, Sd) UCL	22.73

Suggested UCL to Use

95% Student's-t UCL	15.49	or 95% Modified-t UCL	15.64

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	48	Mean	52.6
Maximum	57.8	Median	52.7
SD	4.596	Std. Error of Mean	1.876
Coefficient of Variation	0.0874	Skewness	0.0227
Mean of logged Data	3.96	SD of logged Data	0.0875

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.38	95% Adjusted-CLT UCL (Chen-1995)	55.7
		95% Modified-t UCL (Johnson-1978)	56.38

Nonparametric Distribution Free UCLs

95% CLT UCL	55.69	95% Jackknife UCL	56.38
95% Standard Bootstrap UCL	55.43	95% Bootstrap-t UCL	56.66
95% Hall's Bootstrap UCL	54.28	95% Percentile Bootstrap UCL	55.4
95% BCA Bootstrap UCL	55.33		
90% Chebyshev(Mean, Sd) UCL	58.23	95% Chebyshev(Mean, Sd) UCL	60.78
97.5% Chebyshev(Mean, Sd) UCL	64.32	99% Chebyshev(Mean, Sd) UCL	71.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.844	Mean	0.986
Maximum	1.07	Median	0.995
SD	0.0767	Std. Error of Mean	0.0313
Coefficient of Variation	0.0778	Skewness	-1.433
Mean of logged Data	-0.0171	SD of logged Data	0.0812

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.049	95% Adjusted-CLT UCL (Chen-1995)	1.018
		95% Modified-t UCL (Johnson-1978)	1.046

Nonparametric Distribution Free UCLs

95% CLT UCL	1.037	95% Jackknife UCL	1.049
95% Standard Bootstrap UCL	1.031	95% Bootstrap-t UCL	1.033
95% Hall's Bootstrap UCL	1.023	95% Percentile Bootstrap UCL	1.03
95% BCA Bootstrap UCL	1.023		
90% Chebyshev(Mean, Sd) UCL	1.08	95% Chebyshev(Mean, Sd) UCL	1.122
97.5% Chebyshev(Mean, Sd) UCL	1.181	99% Chebyshev(Mean, Sd) UCL	1.297

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.51	Mean	0.526
Maximum	0.535	Median	0.528
SD	0.00861	Std. Error of Mean	0.00352
Coefficient of Variation	0.0164	Skewness	-1.435
Mean of logged Data	-0.643	SD of logged Data	0.0165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.533	95% Adjusted-CLT UCL (Chen-1995)	0.529
		95% Modified-t UCL (Johnson-1978)	0.533

Nonparametric Distribution Free UCLs

95% CLT UCL	0.532	95% Jackknife UCL	0.533
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.536	95% Chebyshev(Mean, Sd) UCL	0.541
97.5% Chebyshev(Mean, Sd) UCL	0.548	99% Chebyshev(Mean, Sd) UCL	0.561

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.065	Mean	2.129
Maximum	2.165	Median	2.135
SD	0.035	Std. Error of Mean	0.0143
Coefficient of Variation	0.0164	Skewness	-1.438
Mean of logged Data	0.756	SD of logged Data	0.0166

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.158	95% Adjusted-CLT UCL (Chen-1995)	2.144
		95% Modified-t UCL (Johnson-1978)	2.157

Nonparametric Distribution Free UCLs

95% CLT UCL	2.153	95% Jackknife UCL	2.158
95% Standard Bootstrap UCL	2.151	95% Bootstrap-t UCL	2.15
95% Hall's Bootstrap UCL	2.146	95% Percentile Bootstrap UCL	2.149
95% BCA Bootstrap UCL	2.145		
90% Chebyshev(Mean, Sd) UCL	2.172	95% Chebyshev(Mean, Sd) UCL	2.191
97.5% Chebyshev(Mean, Sd) UCL	2.218	99% Chebyshev(Mean, Sd) UCL	2.271

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.145	Mean	2.982
Maximum	4.79	Median	2.805
SD	0.984	Std. Error of Mean	0.402
Coefficient of Variation	0.33	Skewness	1.489
Mean of logged Data	1.053	SD of logged Data	0.3

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.791	95% Adjusted-CLT UCL (Chen-1995)	3.903
		95% Modified-t UCL (Johnson-1978)	3.832

Nonparametric Distribution Free UCLs

95% CLT UCL	3.642	95% Jackknife UCL	3.791
95% Standard Bootstrap UCL	3.592	95% Bootstrap-t UCL	4.353
95% Hall's Bootstrap UCL	6.414	95% Percentile Bootstrap UCL	3.622
95% BCA Bootstrap UCL	3.835		
90% Chebyshev(Mean, Sd) UCL	4.187	95% Chebyshev(Mean, Sd) UCL	4.732
97.5% Chebyshev(Mean, Sd) UCL	5.49	99% Chebyshev(Mean, Sd) UCL	6.978

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.145	Mean	3.143
Maximum	5.01	Median	2.9
SD	1.144	Std. Error of Mean	0.467
Coefficient of Variation	0.364	Skewness	0.862
Mean of logged Data	1.093	SD of logged Data	0.35

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.084	95% Adjusted-CLT UCL (Chen-1995)	4.087
		95% Modified-t UCL (Johnson-1978)	4.112

Nonparametric Distribution Free UCLs

95% CLT UCL	3.911	95% Jackknife UCL	4.084
95% Standard Bootstrap UCL	3.826	95% Bootstrap-t UCL	4.708
95% Hall's Bootstrap UCL	3.856	95% Percentile Bootstrap UCL	3.854
95% BCA Bootstrap UCL	3.883		
90% Chebyshev(Mean, Sd) UCL	4.544	95% Chebyshev(Mean, Sd) UCL	5.179
97.5% Chebyshev(Mean, Sd) UCL	6.059	99% Chebyshev(Mean, Sd) UCL	7.789

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.305	Mean	5.153
Maximum	8.27	Median	4.89
SD	1.994	Std. Error of Mean	0.814
Coefficient of Variation	0.387	Skewness	0.662
Mean of logged Data	1.578	SD of logged Data	0.382

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.793	95% Adjusted-CLT UCL (Chen-1995)	6.726
		95% Modified-t UCL (Johnson-1978)	6.829

Nonparametric Distribution Free UCLs

95% CLT UCL	6.491	95% Jackknife UCL	6.793
95% Standard Bootstrap UCL	6.364	95% Bootstrap-t UCL	7.417
95% Hall's Bootstrap UCL	6.3	95% Percentile Bootstrap UCL	6.375
95% BCA Bootstrap UCL	6.427		
90% Chebyshev(Mean, Sd) UCL	7.594	95% Chebyshev(Mean, Sd) UCL	8.7
97.5% Chebyshev(Mean, Sd) UCL	10.24	99% Chebyshev(Mean, Sd) UCL	13.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	3.05	Mean	3.265
Maximum	3.33	Median	3.305
SD	0.108	Std. Error of Mean	0.0439
Coefficient of Variation	0.033	Skewness	-2.23
Mean of logged Data	1.183	SD of logged Data	0.0338

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.354	95% Adjusted-CLT UCL (Chen-1995)	3.295
		95% Modified-t UCL (Johnson-1978)	3.347

Nonparametric Distribution Free UCLs

95% CLT UCL	3.337	95% Jackknife UCL	3.354
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.397	95% Chebyshev(Mean, Sd) UCL	3.456
97.5% Chebyshev(Mean, Sd) UCL	3.539	99% Chebyshev(Mean, Sd) UCL	3.702

Suggested UCL to Use

95% Student's-t UCL	3.354	or 95% Modified-t UCL	3.347

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.125	Mean	2.303
Maximum	2.94	Median	2.168
SD	0.316	Std. Error of Mean	0.129
Coefficient of Variation	0.137	Skewness	2.319
Mean of logged Data	0.827	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.563	95% Adjusted-CLT UCL (Chen-1995)	2.646
		95% Modified-t UCL (Johnson-1978)	2.583

Nonparametric Distribution Free UCLs

95% CLT UCL	2.515	95% Jackknife UCL	2.563
95% Standard Bootstrap UCL	2.494	95% Bootstrap-t UCL	4.899
95% Hall's Bootstrap UCL	4.011	95% Percentile Bootstrap UCL	2.543
95% BCA Bootstrap UCL	2.588		
90% Chebyshev(Mean, Sd) UCL	2.69	95% Chebyshev(Mean, Sd) UCL	2.865
97.5% Chebyshev(Mean, Sd) UCL	3.109	99% Chebyshev(Mean, Sd) UCL	3.587

Suggested UCL to Use

95% Student's-t UCL	2.563	or 95% Modified-t UCL	2.583

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.145	Mean	3.807
Maximum	6.32	Median	3.74
SD	1.704	Std. Error of Mean	0.696
Coefficient of Variation	0.448	Skewness	0.441
Mean of logged Data	1.25	SD of logged Data	0.459

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.208	95% Adjusted-CLT UCL (Chen-1995)	5.085
		95% Modified-t UCL (Johnson-1978)	5.229

Nonparametric Distribution Free UCLs

95% CLT UCL	4.951	95% Jackknife UCL	5.208
95% Standard Bootstrap UCL	4.837	95% Bootstrap-t UCL	5.656
95% Hall's Bootstrap UCL	4.653	95% Percentile Bootstrap UCL	4.927
95% BCA Bootstrap UCL	4.833		
90% Chebyshev(Mean, Sd) UCL	5.894	95% Chebyshev(Mean, Sd) UCL	6.839
97.5% Chebyshev(Mean, Sd) UCL	8.151	99% Chebyshev(Mean, Sd) UCL	10.73

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	3.18	Mean	3.277
Maximum	3.33	Median	3.288
SD	0.0527	Std. Error of Mean	0.0215
Coefficient of Variation	0.0161	Skewness	-1.449
Mean of logged Data	1.187	SD of logged Data	0.0162

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.32	95% Adjusted-CLT UCL (Chen-1995)	3.298
		95% Modified-t UCL (Johnson-1978)	3.318

Nonparametric Distribution Free UCLs

95% CLT UCL	3.312	95% Jackknife UCL	3.32
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.341	95% Chebyshev(Mean, Sd) UCL	3.37
97.5% Chebyshev(Mean, Sd) UCL	3.411	99% Chebyshev(Mean, Sd) UCL	3.491

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.145	Mean	5.493
Maximum	10.5	Median	5.78
SD	3.147	Std. Error of Mean	1.285
Coefficient of Variation	0.573	Skewness	0.512
Mean of logged Data	1.545	SD of logged Data	0.645

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.082	95% Adjusted-CLT UCL (Chen-1995)	7.893
		95% Modified-t UCL (Johnson-1978)	8.127

Nonparametric Distribution Free UCLs

95% CLT UCL	7.607	95% Jackknife UCL	8.082
95% Standard Bootstrap UCL	7.373	95% Bootstrap-t UCL	8.242
95% Hall's Bootstrap UCL	7.857	95% Percentile Bootstrap UCL	7.563
95% BCA Bootstrap UCL	7.715		
90% Chebyshev(Mean, Sd) UCL	9.348	95% Chebyshev(Mean, Sd) UCL	11.09
97.5% Chebyshev(Mean, Sd) UCL	13.52	99% Chebyshev(Mean, Sd) UCL	18.28

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.27	Mean	1.312
Maximum	1.335	Median	1.315
SD	0.0225	Std. Error of Mean	0.00919
Coefficient of Variation	0.0172	Skewness	-1.491
Mean of logged Data	0.271	SD of logged Data	0.0173

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.33	95% Adjusted-CLT UCL (Chen-1995)	1.321
		95% Modified-t UCL (Johnson-1978)	1.329

Nonparametric Distribution Free UCLs

95% CLT UCL	1.327	95% Jackknife UCL	1.33
95% Standard Bootstrap UCL	1.326	95% Bootstrap-t UCL	1.325
95% Hall's Bootstrap UCL	1.322	95% Percentile Bootstrap UCL	1.323
95% BCA Bootstrap UCL	1.323		
90% Chebyshev(Mean, Sd) UCL	1.339	95% Chebyshev(Mean, Sd) UCL	1.352
97.5% Chebyshev(Mean, Sd) UCL	1.369	99% Chebyshev(Mean, Sd) UCL	1.403

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.1	Mean	3.434
Maximum	4.22	Median	3.318
SD	0.397	Std. Error of Mean	0.162
Coefficient of Variation	0.115	Skewness	2.116
Mean of logged Data	1.229	SD of logged Data	0.108

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.76	95% Adjusted-CLT UCL (Chen-1995)	3.85
		95% Modified-t UCL (Johnson-1978)	3.784

Nonparametric Distribution Free UCLs

95% CLT UCL	3.701	95% Jackknife UCL	3.76
95% Standard Bootstrap UCL	3.676	95% Bootstrap-t UCL	4.44
95% Hall's Bootstrap UCL	5.177	95% Percentile Bootstrap UCL	3.707
95% BCA Bootstrap UCL	3.779		
90% Chebyshev(Mean, Sd) UCL	3.92	95% Chebyshev(Mean, Sd) UCL	4.14
97.5% Chebyshev(Mean, Sd) UCL	4.445	99% Chebyshev(Mean, Sd) UCL	5.045

Suggested UCL to Use

95% Student's-t UCL	3.76	or 95% Modified-t UCL	3.784

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.737	Mean	1.793
Maximum	2.94	Median	1.778
SD	1.114	Std. Error of Mean	0.455
Coefficient of Variation	0.622	Skewness	0.0141
Mean of logged Data	0.389	SD of logged Data	0.706

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.709	95% Adjusted-CLT UCL (Chen-1995)	2.544
		95% Modified-t UCL (Johnson-1978)	2.71

Nonparametric Distribution Free UCLs

95% CLT UCL	2.541	95% Jackknife UCL	2.709
95% Standard Bootstrap UCL	2.483	95% Bootstrap-t UCL	2.746
95% Hall's Bootstrap UCL	2.166	95% Percentile Bootstrap UCL	2.48
95% BCA Bootstrap UCL	2.467		
90% Chebyshev(Mean, Sd) UCL	3.157	95% Chebyshev(Mean, Sd) UCL	3.776
97.5% Chebyshev(Mean, Sd) UCL	4.634	99% Chebyshev(Mean, Sd) UCL	6.319

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.48	Mean	3.523
Maximum	5.53	Median	3.318
SD	1.078	Std. Error of Mean	0.44
Coefficient of Variation	0.306	Skewness	1.563
Mean of logged Data	1.225	SD of logged Data	0.278

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.409	95% Adjusted-CLT UCL (Chen-1995)	4.546
		95% Modified-t UCL (Johnson-1978)	4.456

Nonparametric Distribution Free UCLs

95% CLT UCL	4.246	95% Jackknife UCL	4.409
95% Standard Bootstrap UCL	4.178	95% Bootstrap-t UCL	5.032
95% Hall's Bootstrap UCL	7.948	95% Percentile Bootstrap UCL	4.26
95% BCA Bootstrap UCL	4.426		
90% Chebyshev(Mean, Sd) UCL	4.842	95% Chebyshev(Mean, Sd) UCL	5.44
97.5% Chebyshev(Mean, Sd) UCL	6.27	99% Chebyshev(Mean, Sd) UCL	7.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.305	Mean	5.313
Maximum	8.98	Median	5.075
SD	2.147	Std. Error of Mean	0.876
Coefficient of Variation	0.404	Skewness	1.01
Mean of logged Data	1.606	SD of logged Data	0.388

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.079	95% Adjusted-CLT UCL (Chen-1995)	7.14
		95% Modified-t UCL (Johnson-1978)	7.139

Nonparametric Distribution Free UCLs

95% CLT UCL	6.754	95% Jackknife UCL	7.079
95% Standard Bootstrap UCL	6.656	95% Bootstrap-t UCL	7.81
95% Hall's Bootstrap UCL	7.648	95% Percentile Bootstrap UCL	6.722
95% BCA Bootstrap UCL	6.917		
90% Chebyshev(Mean, Sd) UCL	7.942	95% Chebyshev(Mean, Sd) UCL	9.133
97.5% Chebyshev(Mean, Sd) UCL	10.79	99% Chebyshev(Mean, Sd) UCL	14.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:45:03 PM
From File	38002P.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.4	Mean	12.07
Maximum	12.7	Median	12.1
SD	0.441	Std. Error of Mean	0.18
Coefficient of Variation	0.0366	Skewness	-0.169
Mean of logged Data	2.49	SD of logged Data	0.0367

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.43	95% Adjusted-CLT UCL (Chen-1995)	12.35
		95% Modified-t UCL (Johnson-1978)	12.43

Nonparametric Distribution Free UCLs

95% CLT UCL	12.36	95% Jackknife UCL	12.43
95% Standard Bootstrap UCL	12.34	95% Bootstrap-t UCL	12.39
95% Hall's Bootstrap UCL	12.36	95% Percentile Bootstrap UCL	12.33
95% BCA Bootstrap UCL	12.32		
90% Chebyshev(Mean, Sd) UCL	12.61	95% Chebyshev(Mean, Sd) UCL	12.85
97.5% Chebyshev(Mean, Sd) UCL	13.19	99% Chebyshev(Mean, Sd) UCL	13.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.8	Mean	11.33
Maximum	11.7	Median	11.35
SD	0.361	Std. Error of Mean	0.148
Coefficient of Variation	0.0319	Skewness	-0.404

Mean of logged Data	2.427	SD of logged Data	0.032

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.63	95% Adjusted-CLT UCL (Chen-1995)	11.55
		95% Modified-t UCL (Johnson-1978)	11.63

Nonparametric Distribution Free UCLs

95% CLT UCL	11.58	95% Jackknife UCL	11.63
95% Standard Bootstrap UCL	11.56	95% Bootstrap-t UCL	11.63
95% Hall's Bootstrap UCL	11.53	95% Percentile Bootstrap UCL	11.55
95% BCA Bootstrap UCL	11.53		
90% Chebyshev(Mean, Sd) UCL	11.78	95% Chebyshev(Mean, Sd) UCL	11.98
97.5% Chebyshev(Mean, Sd) UCL	12.25	99% Chebyshev(Mean, Sd) UCL	12.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	42.3	Mean	44.12
Maximum	45.6	Median	44.4
SD	1.25	Std. Error of Mean	0.51
Coefficient of Variation	0.0283	Skewness	-0.435
Mean of logged Data	3.787	SD of logged Data	0.0285

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.14	95% Adjusted-CLT UCL (Chen-1995)	44.86
		95% Modified-t UCL (Johnson-1978)	45.13

Nonparametric Distribution Free UCLs

95% CLT UCL	44.96	95% Jackknife UCL	45.14
95% Standard Bootstrap UCL	44.89	95% Bootstrap-t UCL	45.12
95% Hall's Bootstrap UCL	44.74	95% Percentile Bootstrap UCL	44.85
95% BCA Bootstrap UCL	44.77		

90% Chebyshev(Mean, Sd) UCL	45.65	95% Chebyshev(Mean, Sd) UCL	46.34
97.5% Chebyshev(Mean, Sd) UCL	47.3	99% Chebyshev(Mean, Sd) UCL	49.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.77	Mean	0.924
Maximum	0.995	Median	0.965
SD	0.0886	Std. Error of Mean	0.0362
Coefficient of Variation	0.0959	Skewness	-1.362
Mean of logged Data	-0.0828	SD of logged Data	0.101

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.997	95% Adjusted-CLT UCL (Chen-1995)	0.962
		95% Modified-t UCL (Johnson-1978)	0.994

Nonparametric Distribution Free UCLs

95% CLT UCL	0.984	95% Jackknife UCL	0.997
95% Standard Bootstrap UCL	0.978	95% Bootstrap-t UCL	0.978
95% Hall's Bootstrap UCL	0.962	95% Percentile Bootstrap UCL	0.976
95% BCA Bootstrap UCL	0.966		
90% Chebyshev(Mean, Sd) UCL	1.033	95% Chebyshev(Mean, Sd) UCL	1.082
97.5% Chebyshev(Mean, Sd) UCL	1.15	99% Chebyshev(Mean, Sd) UCL	1.284

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4

		Number of Missing Observations	0
Minimum	0.515	Mean	0.523
Maximum	0.53	Median	0.523
SD	0.00524	Std. Error of Mean	0.00214
Coefficient of Variation	0.01	Skewness	-4.76E-14
Mean of logged Data	-0.649	SD of logged Data	0.01

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.527	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.527

Nonparametric Distribution Free UCLs

95% CLT UCL	0.526	95% Jackknife UCL	0.527
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.529	95% Chebyshev(Mean, Sd) UCL	0.532
97.5% Chebyshev(Mean, Sd) UCL	0.536	99% Chebyshev(Mean, Sd) UCL	0.544

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	2.119
Maximum	2.155	Median	2.12
SD	0.0258	Std. Error of Mean	0.0105
Coefficient of Variation	0.0122	Skewness	-0.225
Mean of logged Data	0.751	SD of logged Data	0.0122

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.14	95% Adjusted-CLT UCL (Chen-1995)	2.135
		95% Modified-t UCL (Johnson-1978)	2.14

Nonparametric Distribution Free UCLs

95% CLT UCL	2.136	95% Jackknife UCL	2.14
95% Standard Bootstrap UCL	2.135	95% Bootstrap-t UCL	2.14
95% Hall's Bootstrap UCL	2.137	95% Percentile Bootstrap UCL	2.135
95% BCA Bootstrap UCL	2.132		
90% Chebyshev(Mean, Sd) UCL	2.151	95% Chebyshev(Mean, Sd) UCL	2.165
97.5% Chebyshev(Mean, Sd) UCL	2.185	99% Chebyshev(Mean, Sd) UCL	2.224

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	2.185
Maximum	2.51	Median	2.13
SD	0.161	Std. Error of Mean	0.0658
Coefficient of Variation	0.0738	Skewness	2.309
Mean of logged Data	0.779	SD of logged Data	0.07

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.318	95% Adjusted-CLT UCL (Chen-1995)	2.36
		95% Modified-t UCL (Johnson-1978)	2.328

Nonparametric Distribution Free UCLs

95% CLT UCL	2.293	95% Jackknife UCL	2.318
95% Standard Bootstrap UCL	2.284	95% Bootstrap-t UCL	2.756
95% Hall's Bootstrap UCL	2.882	95% Percentile Bootstrap UCL	2.311
95% BCA Bootstrap UCL	2.323		
90% Chebyshev(Mean, Sd) UCL	2.383	95% Chebyshev(Mean, Sd) UCL	2.472
97.5% Chebyshev(Mean, Sd) UCL	2.596	99% Chebyshev(Mean, Sd) UCL	2.84

Suggested UCL to Use

95% Student's-t UCL	2.318	or 95% Modified-t UCL	2.328

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.63	Mean	2.143
Maximum	3.23	Median	1.85
SD	0.646	Std. Error of Mean	0.264
Coefficient of Variation	0.301	Skewness	1.221
Mean of logged Data	0.728	SD of logged Data	0.278

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.675	95% Adjusted-CLT UCL (Chen-1995)	2.718
		95% Modified-t UCL (Johnson-1978)	2.697

Nonparametric Distribution Free UCLs

95% CLT UCL	2.577	95% Jackknife UCL	2.675
95% Standard Bootstrap UCL	2.536	95% Bootstrap-t UCL	4.059
95% Hall's Bootstrap UCL	5.462	95% Percentile Bootstrap UCL	2.57
95% BCA Bootstrap UCL	2.67		
90% Chebyshev(Mean, Sd) UCL	2.935	95% Chebyshev(Mean, Sd) UCL	3.293
97.5% Chebyshev(Mean, Sd) UCL	3.791	99% Chebyshev(Mean, Sd) UCL	4.768

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.35	Mean	3.47
Maximum	4.67	Median	3.343
SD	0.761	Std. Error of Mean	0.31
Coefficient of Variation	0.219	Skewness	0.245
Mean of logged Data	1.224	SD of logged Data	0.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.096	95% Adjusted-CLT UCL (Chen-1995)	4.014
		95% Modified-t UCL (Johnson-1978)	4.101

Nonparametric Distribution Free UCLs

95% CLT UCL	3.981	95% Jackknife UCL	4.096
95% Standard Bootstrap UCL	3.934	95% Bootstrap-t UCL	4.135
95% Hall's Bootstrap UCL	4.571	95% Percentile Bootstrap UCL	3.948
95% BCA Bootstrap UCL	3.948		
90% Chebyshev(Mean, Sd) UCL	4.401	95% Chebyshev(Mean, Sd) UCL	4.823
97.5% Chebyshev(Mean, Sd) UCL	5.409	99% Chebyshev(Mean, Sd) UCL	6.559

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.17	Mean	3.079
Maximum	3.315	Median	3.25
SD	0.447	Std. Error of Mean	0.183
Coefficient of Variation	0.145	Skewness	-2.409
Mean of logged Data	1.114	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.447	95% Adjusted-CLT UCL (Chen-1995)	3.188
		95% Modified-t UCL (Johnson-1978)	3.417

Nonparametric Distribution Free UCLs

95% CLT UCL	3.379	95% Jackknife UCL	3.447
95% Standard Bootstrap UCL	3.361	95% Bootstrap-t UCL	3.338
95% Hall's Bootstrap UCL	3.248	95% Percentile Bootstrap UCL	3.278
95% BCA Bootstrap UCL	3.265		
90% Chebyshev(Mean, Sd) UCL	3.627	95% Chebyshev(Mean, Sd) UCL	3.875
97.5% Chebyshev(Mean, Sd) UCL	4.219	99% Chebyshev(Mean, Sd) UCL	4.895

Suggested UCL to Use

95% Student's-t UCL	3.447	or 95% Modified-t UCL	3.417

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	2.119
Maximum	2.155	Median	2.12
SD	0.0258	Std. Error of Mean	0.0105
Coefficient of Variation	0.0122	Skewness	-0.225
Mean of logged Data	0.751	SD of logged Data	0.0122

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.14	95% Adjusted-CLT UCL (Chen-1995)	2.135
		95% Modified-t UCL (Johnson-1978)	2.14

Nonparametric Distribution Free UCLs

95% CLT UCL	2.136	95% Jackknife UCL	2.14
95% Standard Bootstrap UCL	2.134	95% Bootstrap-t UCL	2.14
95% Hall's Bootstrap UCL	2.138	95% Percentile Bootstrap UCL	2.135
95% BCA Bootstrap UCL	2.133		
90% Chebyshev(Mean, Sd) UCL	2.151	95% Chebyshev(Mean, Sd) UCL	2.165
97.5% Chebyshev(Mean, Sd) UCL	2.185	99% Chebyshev(Mean, Sd) UCL	2.224

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	2.65
Maximum	3.91	Median	2.408
SD	0.71	Std. Error of Mean	0.29
Coefficient of Variation	0.268	Skewness	1.332
Mean of logged Data	0.948	SD of logged Data	0.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	3.234	95% Adjusted-CLT UCL (Chen-1995)	3.295
		95% Modified-t UCL (Johnson-1978)	3.26

Nonparametric Distribution Free UCLs

95% CLT UCL	3.127	95% Jackknife UCL	3.234
95% Standard Bootstrap UCL	3.077	95% Bootstrap-t UCL	4.05
95% Hall's Bootstrap UCL	4.993	95% Percentile Bootstrap UCL	3.113
95% BCA Bootstrap UCL	3.201		
90% Chebyshev(Mean, Sd) UCL	3.519	95% Chebyshev(Mean, Sd) UCL	3.913
97.5% Chebyshev(Mean, Sd) UCL	4.46	99% Chebyshev(Mean, Sd) UCL	5.533

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.205	Mean	3.26
Maximum	3.315	Median	3.26
SD	0.0383	Std. Error of Mean	0.0157
Coefficient of Variation	0.0118	Skewness	-2.61E-14
Mean of logged Data	1.182	SD of logged Data	0.0118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.292	95% Adjusted-CLT UCL (Chen-1995)	3.286
		95% Modified-t UCL (Johnson-1978)	3.292

Nonparametric Distribution Free UCLs

95% CLT UCL	3.286	95% Jackknife UCL	3.292
95% Standard Bootstrap UCL	3.284	95% Bootstrap-t UCL	3.293
95% Hall's Bootstrap UCL	3.293	95% Percentile Bootstrap UCL	3.283
95% BCA Bootstrap UCL	3.283		
90% Chebyshev(Mean, Sd) UCL	3.307	95% Chebyshev(Mean, Sd) UCL	3.328
97.5% Chebyshev(Mean, Sd) UCL	3.358	99% Chebyshev(Mean, Sd) UCL	3.416

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.11	Mean	3.66
Maximum	6.86	Median	3.295
SD	1.761	Std. Error of Mean	0.719
Coefficient of Variation	0.481	Skewness	1.426
Mean of logged Data	1.213	SD of logged Data	0.438

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.108	95% Adjusted-CLT UCL (Chen-1995)	5.289
		95% Modified-t UCL (Johnson-1978)	5.178

Nonparametric Distribution Free UCLs

95% CLT UCL	4.842	95% Jackknife UCL	5.108
95% Standard Bootstrap UCL	4.734	95% Bootstrap-t UCL	6.247
95% Hall's Bootstrap UCL	8.689	95% Percentile Bootstrap UCL	4.845
95% BCA Bootstrap UCL	5.023		
90% Chebyshev(Mean, Sd) UCL	5.816	95% Chebyshev(Mean, Sd) UCL	6.793
97.5% Chebyshev(Mean, Sd) UCL	8.148	99% Chebyshev(Mean, Sd) UCL	10.81

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.28	Mean	1.303
Maximum	1.325	Median	1.303
SD	0.0157	Std. Error of Mean	0.00641
Coefficient of Variation	0.0121	Skewness	-0.12
Mean of logged Data	0.265	SD of logged Data	0.0121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.316	95% Adjusted-CLT UCL (Chen-1995)	1.314

		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.314	95% Jackknife UCL	1.316
95% Standard Bootstrap UCL	1.313	95% Bootstrap-t UCL	1.317
95% Hall's Bootstrap UCL	1.317	95% Percentile Bootstrap UCL	1.313
95% BCA Bootstrap UCL	1.313		
90% Chebyshev(Mean, Sd) UCL	1.323	95% Chebyshev(Mean, Sd) UCL	1.331
97.5% Chebyshev(Mean, Sd) UCL	1.343	99% Chebyshev(Mean, Sd) UCL	1.367

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.22	Mean	2.99
Maximum	3.315	Median	3.235
SD	0.452	Std. Error of Mean	0.185
Coefficient of Variation	0.151	Skewness	-1.313
Mean of logged Data	1.085	SD of logged Data	0.164

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.362	95% Adjusted-CLT UCL (Chen-1995)	3.188
		95% Modified-t UCL (Johnson-1978)	3.346

Nonparametric Distribution Free UCLs

95% CLT UCL	3.294	95% Jackknife UCL	3.362
95% Standard Bootstrap UCL	3.266	95% Bootstrap-t UCL	3.26
95% Hall's Bootstrap UCL	3.186	95% Percentile Bootstrap UCL	3.265
95% BCA Bootstrap UCL	3.191		
90% Chebyshev(Mean, Sd) UCL	3.544	95% Chebyshev(Mean, Sd) UCL	3.795
97.5% Chebyshev(Mean, Sd) UCL	4.143	99% Chebyshev(Mean, Sd) UCL	4.827

Suggested UCL to Use

95% Student's-t UCL	3.362	or 95% Modified-t UCL	3.346

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.27	Mean	1.632
Maximum	1.99	Median	1.63
SD	0.233	Std. Error of Mean	0.095
Coefficient of Variation	0.143	Skewness	-0.0292
Mean of logged Data	0.481	SD of logged Data	0.146

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.823	95% Adjusted-CLT UCL (Chen-1995)	1.787
		95% Modified-t UCL (Johnson-1978)	1.823

Nonparametric Distribution Free UCLs

95% CLT UCL	1.788	95% Jackknife UCL	1.823
95% Standard Bootstrap UCL	1.775	95% Bootstrap-t UCL	1.814
95% Hall's Bootstrap UCL	1.834	95% Percentile Bootstrap UCL	1.768
95% BCA Bootstrap UCL	1.768		
90% Chebyshev(Mean, Sd) UCL	1.917	95% Chebyshev(Mean, Sd) UCL	2.046
97.5% Chebyshev(Mean, Sd) UCL	2.225	99% Chebyshev(Mean, Sd) UCL	2.577

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.22	Mean	3.169
Maximum	3.53	Median	3.275
SD	0.485	Std. Error of Mean	0.198
Coefficient of Variation	0.153	Skewness	-2.017
Mean of logged Data	1.142	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.568	95% Adjusted-CLT UCL (Chen-1995)	3.321
		95% Modified-t UCL (Johnson-1978)	3.541

Nonparametric Distribution Free UCLs

95% CLT UCL	3.495	95% Jackknife UCL	3.568
95% Standard Bootstrap UCL	3.47	95% Bootstrap-t UCL	3.426
95% Hall's Bootstrap UCL	3.369	95% Percentile Bootstrap UCL	3.43
95% BCA Bootstrap UCL	3.391		
90% Chebyshev(Mean, Sd) UCL	3.763	95% Chebyshev(Mean, Sd) UCL	4.032
97.5% Chebyshev(Mean, Sd) UCL	4.405	99% Chebyshev(Mean, Sd) UCL	5.138

Suggested UCL to Use

95% Student's-t UCL	3.568	or 95% Modified-t UCL	3.541

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.14	Mean	3.668
Maximum	6.04	Median	3.433
SD	1.284	Std. Error of Mean	0.524
Coefficient of Variation	0.35	Skewness	1.369
Mean of logged Data	1.253	SD of logged Data	0.331

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.725	95% Adjusted-CLT UCL (Chen-1995)	4.844
		95% Modified-t UCL (Johnson-1978)	4.774

Nonparametric Distribution Free UCLs

95% CLT UCL	4.531	95% Jackknife UCL	4.725
95% Standard Bootstrap UCL	4.457	95% Bootstrap-t UCL	5.384
95% Hall's Bootstrap UCL	9.446	95% Percentile Bootstrap UCL	4.482
95% BCA Bootstrap UCL	4.712		
90% Chebyshev(Mean, Sd) UCL	5.241	95% Chebyshev(Mean, Sd) UCL	5.954
97.5% Chebyshev(Mean, Sd) UCL	6.943	99% Chebyshev(Mean, Sd) UCL	8.885

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:46:31 PM
From File	38002Q.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.3	Mean	9.665
Maximum	11.4	Median	9.53
SD	1.148	Std. Error of Mean	0.469
Coefficient of Variation	0.119	Skewness	0.458
Mean of logged Data	2.263	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.61	95% Adjusted-CLT UCL (Chen-1995)	10.53
		95% Modified-t UCL (Johnson-1978)	10.62

Nonparametric Distribution Free UCLs

95% CLT UCL	10.44	95% Jackknife UCL	10.61
95% Standard Bootstrap UCL	10.36	95% Bootstrap-t UCL	10.86
95% Hall's Bootstrap UCL	10.51	95% Percentile Bootstrap UCL	10.38
95% BCA Bootstrap UCL	10.41		
90% Chebyshev(Mean, Sd) UCL	11.07	95% Chebyshev(Mean, Sd) UCL	11.71
97.5% Chebyshev(Mean, Sd) UCL	12.59	99% Chebyshev(Mean, Sd) UCL	14.33

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.7	Mean	8.327
Maximum	8.9	Median	8.42
SD	0.418	Std. Error of Mean	0.171
Coefficient of Variation	0.0502	Skewness	-0.316
Mean of logged Data	2.118	SD of logged Data	0.0505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.67	95% Adjusted-CLT UCL (Chen-1995)	8.584
		95% Modified-t UCL (Johnson-1978)	8.667

Nonparametric Distribution Free UCLs

95% CLT UCL	8.607	95% Jackknife UCL	8.67
95% Standard Bootstrap UCL	8.586	95% Bootstrap-t UCL	8.651
95% Hall's Bootstrap UCL	8.583	95% Percentile Bootstrap UCL	8.582
95% BCA Bootstrap UCL	8.552		
90% Chebyshev(Mean, Sd) UCL	8.838	95% Chebyshev(Mean, Sd) UCL	9.07
97.5% Chebyshev(Mean, Sd) UCL	9.392	99% Chebyshev(Mean, Sd) UCL	10.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	32.6	Mean	36.27
Maximum	40.1	Median	35.75
SD	2.59	Std. Error of Mean	1.058
Coefficient of Variation	0.0714	Skewness	0.22
Mean of logged Data	3.589	SD of logged Data	0.0713

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.4	95% Adjusted-CLT UCL (Chen-1995)	38.11
		95% Modified-t UCL (Johnson-1978)	38.41

Nonparametric Distribution Free UCLs

95% CLT UCL	38.01	95% Jackknife UCL	38.4
95% Standard Bootstrap UCL	37.86	95% Bootstrap-t UCL	39.03
95% Hall's Bootstrap UCL	41.26	95% Percentile Bootstrap UCL	37.92
95% BCA Bootstrap UCL	37.93		
90% Chebyshev(Mean, Sd) UCL	39.44	95% Chebyshev(Mean, Sd) UCL	40.88
97.5% Chebyshev(Mean, Sd) UCL	42.87	99% Chebyshev(Mean, Sd) UCL	46.79

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.925	Mean	1.033
Maximum	1.25	Median	0.978
SD	0.121	Std. Error of Mean	0.0495
Coefficient of Variation	0.117	Skewness	1.444
Mean of logged Data	0.0274	SD of logged Data	0.112

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.133	95% Adjusted-CLT UCL (Chen-1995)	1.146
		95% Modified-t UCL (Johnson-1978)	1.138

Nonparametric Distribution Free UCLs

95% CLT UCL	1.115	95% Jackknife UCL	1.133
95% Standard Bootstrap UCL	1.107	95% Bootstrap-t UCL	1.395
95% Hall's Bootstrap UCL	1.769	95% Percentile Bootstrap UCL	1.109
95% BCA Bootstrap UCL	1.132		
90% Chebyshev(Mean, Sd) UCL	1.182	95% Chebyshev(Mean, Sd) UCL	1.249
97.5% Chebyshev(Mean, Sd) UCL	1.342	99% Chebyshev(Mean, Sd) UCL	1.526

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.494	Mean	0.519
Maximum	0.53	Median	0.523
SD	0.013	Std. Error of Mean	0.00531
Coefficient of Variation	0.0251	Skewness	-1.994
Mean of logged Data	-0.656	SD of logged Data	0.0255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.53	95% Adjusted-CLT UCL (Chen-1995)	0.523
		95% Modified-t UCL (Johnson-1978)	0.529

Nonparametric Distribution Free UCLs

95% CLT UCL	0.528	95% Jackknife UCL	0.53
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.535	95% Chebyshev(Mean, Sd) UCL	0.542
97.5% Chebyshev(Mean, Sd) UCL	0.552	99% Chebyshev(Mean, Sd) UCL	0.572

Suggested UCL to Use

95% Student's-t UCL	0.53	or 95% Modified-t UCL	0.529

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	2.103
Maximum	2.145	Median	2.118
SD	0.0513	Std. Error of Mean	0.0209
Coefficient of Variation	0.0244	Skewness	-1.845
Mean of logged Data	0.743	SD of logged Data	0.0247

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.145	95% Adjusted-CLT UCL (Chen-1995)	2.121
		95% Modified-t UCL (Johnson-1978)	2.143

Nonparametric Distribution Free UCLs

95% CLT UCL	2.138	95% Jackknife UCL	2.145
95% Standard Bootstrap UCL	2.135	95% Bootstrap-t UCL	2.132
95% Hall's Bootstrap UCL	2.124	95% Percentile Bootstrap UCL	2.131
95% BCA Bootstrap UCL	2.127		
90% Chebyshev(Mean, Sd) UCL	2.166	95% Chebyshev(Mean, Sd) UCL	2.195
97.5% Chebyshev(Mean, Sd) UCL	2.234	99% Chebyshev(Mean, Sd) UCL	2.312

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	2.771
Maximum	4.7	Median	2.258
SD	1.057	Std. Error of Mean	0.432
Coefficient of Variation	0.382	Skewness	1.591
Mean of logged Data	0.968	SD of logged Data	0.336

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.641	95% Adjusted-CLT UCL (Chen-1995)	3.78
		95% Modified-t UCL (Johnson-1978)	3.687

Nonparametric Distribution Free UCLs

95% CLT UCL	3.481	95% Jackknife UCL	3.641
95% Standard Bootstrap UCL	3.431	95% Bootstrap-t UCL	6.883
95% Hall's Bootstrap UCL	7.805	95% Percentile Bootstrap UCL	3.419
95% BCA Bootstrap UCL	3.693		
90% Chebyshev(Mean, Sd) UCL	4.066	95% Chebyshev(Mean, Sd) UCL	4.652
97.5% Chebyshev(Mean, Sd) UCL	5.466	99% Chebyshev(Mean, Sd) UCL	7.065

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	2.998
Maximum	5.21	Median	2.528
SD	1.249	Std. Error of Mean	0.51
Coefficient of Variation	0.417	Skewness	1.344
Mean of logged Data	1.034	SD of logged Data	0.379

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.025	95% Adjusted-CLT UCL (Chen-1995)	4.135
		95% Modified-t UCL (Johnson-1978)	4.072

Nonparametric Distribution Free UCLs

95% CLT UCL	3.836	95% Jackknife UCL	4.025
95% Standard Bootstrap UCL	3.761	95% Bootstrap-t UCL	5.777
95% Hall's Bootstrap UCL	7.484	95% Percentile Bootstrap UCL	3.876
95% BCA Bootstrap UCL	4.044		
90% Chebyshev(Mean, Sd) UCL	4.527	95% Chebyshev(Mean, Sd) UCL	5.22
97.5% Chebyshev(Mean, Sd) UCL	6.182	99% Chebyshev(Mean, Sd) UCL	8.072

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	5.058
Maximum	8.85	Median	4.283
SD	2.332	Std. Error of Mean	0.952
Coefficient of Variation	0.461	Skewness	0.922
Mean of logged Data	1.537	SD of logged Data	0.442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.976	95% Adjusted-CLT UCL (Chen-1995)	7.007
		95% Modified-t UCL (Johnson-1978)	7.036

Nonparametric Distribution Free UCLs

95% CLT UCL	6.624	95% Jackknife UCL	6.976
95% Standard Bootstrap UCL	6.485	95% Bootstrap-t UCL	7.594
95% Hall's Bootstrap UCL	7.492	95% Percentile Bootstrap UCL	6.581
95% BCA Bootstrap UCL	6.692		
90% Chebyshev(Mean, Sd) UCL	7.914	95% Chebyshev(Mean, Sd) UCL	9.208
97.5% Chebyshev(Mean, Sd) UCL	11	99% Chebyshev(Mean, Sd) UCL	14.53

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	3.906
Maximum	5.31	Median	3.568
SD	0.902	Std. Error of Mean	0.368
Coefficient of Variation	0.231	Skewness	0.867
Mean of logged Data	1.341	SD of logged Data	0.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.648	95% Adjusted-CLT UCL (Chen-1995)	4.651
		95% Modified-t UCL (Johnson-1978)	4.67

Nonparametric Distribution Free UCLs

95% CLT UCL	4.512	95% Jackknife UCL	4.648
95% Standard Bootstrap UCL	4.461	95% Bootstrap-t UCL	5.236
95% Hall's Bootstrap UCL	5.34	95% Percentile Bootstrap UCL	4.487
95% BCA Bootstrap UCL	4.589		
90% Chebyshev(Mean, Sd) UCL	5.011	95% Chebyshev(Mean, Sd) UCL	5.511
97.5% Chebyshev(Mean, Sd) UCL	6.205	99% Chebyshev(Mean, Sd) UCL	7.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	2.268
Maximum	3.07	Median	2.133
SD	0.397	Std. Error of Mean	0.162
Coefficient of Variation	0.175	Skewness	2.344
Mean of logged Data	0.808	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.594	95% Adjusted-CLT UCL (Chen-1995)	2.7
		95% Modified-t UCL (Johnson-1978)	2.62

Nonparametric Distribution Free UCLs

95% CLT UCL	2.534	95% Jackknife UCL	2.594
95% Standard Bootstrap UCL	2.51	95% Bootstrap-t UCL	4.874
95% Hall's Bootstrap UCL	4.468	95% Percentile Bootstrap UCL	2.58
95% BCA Bootstrap UCL	2.602		
90% Chebyshev(Mean, Sd) UCL	2.754	95% Chebyshev(Mean, Sd) UCL	2.974
97.5% Chebyshev(Mean, Sd) UCL	3.279	99% Chebyshev(Mean, Sd) UCL	3.879

Suggested UCL to Use

95% Student's-t UCL	2.594	or 95% Modified-t UCL	2.62

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	3.811
Maximum	6.83	Median	3.348
SD	2.033	Std. Error of Mean	0.83
Coefficient of Variation	0.534	Skewness	0.544
Mean of logged Data	1.215	SD of logged Data	0.545

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.483	95% Adjusted-CLT UCL (Chen-1995)	5.373
		95% Modified-t UCL (Johnson-1978)	5.514

Nonparametric Distribution Free UCLs

95% CLT UCL	5.176	95% Jackknife UCL	5.483
95% Standard Bootstrap UCL	5.026	95% Bootstrap-t UCL	5.722
95% Hall's Bootstrap UCL	4.77	95% Percentile Bootstrap UCL	5.131
95% BCA Bootstrap UCL	5.136		
90% Chebyshev(Mean, Sd) UCL	6.301	95% Chebyshev(Mean, Sd) UCL	7.429
97.5% Chebyshev(Mean, Sd) UCL	8.995	99% Chebyshev(Mean, Sd) UCL	12.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.085	Mean	3.237
Maximum	3.3	Median	3.258
SD	0.079	Std. Error of Mean	0.0323
Coefficient of Variation	0.0244	Skewness	-1.848
Mean of logged Data	1.174	SD of logged Data	0.0248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.302	95% Adjusted-CLT UCL (Chen-1995)	3.264
		95% Modified-t UCL (Johnson-1978)	3.298

Nonparametric Distribution Free UCLs

95% CLT UCL	3.29	95% Jackknife UCL	3.302
95% Standard Bootstrap UCL	3.286	95% Bootstrap-t UCL	3.281
95% Hall's Bootstrap UCL	3.27	95% Percentile Bootstrap UCL	3.278
95% BCA Bootstrap UCL	3.273		
90% Chebyshev(Mean, Sd) UCL	3.333	95% Chebyshev(Mean, Sd) UCL	3.377
97.5% Chebyshev(Mean, Sd) UCL	3.438	99% Chebyshev(Mean, Sd) UCL	3.558

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	3.633
Maximum	7.86	Median	2.12
SD	2.501	Std. Error of Mean	1.021
Coefficient of Variation	0.689	Skewness	1.308
Mean of logged Data	1.121	SD of logged Data	0.607

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.69	95% Adjusted-CLT UCL (Chen-1995)	5.895
		95% Modified-t UCL (Johnson-1978)	5.781

Nonparametric Distribution Free UCLs

95% CLT UCL	5.312	95% Jackknife UCL	5.69
95% Standard Bootstrap UCL	5.196	95% Bootstrap-t UCL	79.6
95% Hall's Bootstrap UCL	64.42	95% Percentile Bootstrap UCL	5.183
95% BCA Bootstrap UCL	5.563		
90% Chebyshev(Mean, Sd) UCL	6.696	95% Chebyshev(Mean, Sd) UCL	8.083
97.5% Chebyshev(Mean, Sd) UCL	10.01	99% Chebyshev(Mean, Sd) UCL	13.79

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.083

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.235	Mean	1.296
Maximum	1.32	Median	1.305
SD	0.0317	Std. Error of Mean	0.0129
Coefficient of Variation	0.0245	Skewness	-1.857
Mean of logged Data	0.259	SD of logged Data	0.0248

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.322	95% Adjusted-CLT UCL (Chen-1995)	1.307
		95% Modified-t UCL (Johnson-1978)	1.32

Nonparametric Distribution Free UCLs

95% CLT UCL	1.317	95% Jackknife UCL	1.322
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.335	95% Chebyshev(Mean, Sd) UCL	1.352
97.5% Chebyshev(Mean, Sd) UCL	1.377	99% Chebyshev(Mean, Sd) UCL	1.425

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.02	Mean	3.394
Maximum	4.46	Median	3.258
SD	0.533	Std. Error of Mean	0.218
Coefficient of Variation	0.157	Skewness	2.22
Mean of logged Data	1.213	SD of logged Data	0.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.833	95% Adjusted-CLT UCL (Chen-1995)	3.963
		95% Modified-t UCL (Johnson-1978)	3.866

Nonparametric Distribution Free UCLs

95% CLT UCL	3.752	95% Jackknife UCL	3.833
95% Standard Bootstrap UCL	3.717	95% Bootstrap-t UCL	4.68
95% Hall's Bootstrap UCL	5.755	95% Percentile Bootstrap UCL	3.794
95% BCA Bootstrap UCL	3.864		
90% Chebyshev(Mean, Sd) UCL	4.047	95% Chebyshev(Mean, Sd) UCL	4.343
97.5% Chebyshev(Mean, Sd) UCL	4.754	99% Chebyshev(Mean, Sd) UCL	5.56

Suggested UCL to Use

95% Student's-t UCL	3.833	or 95% Modified-t UCL	3.866

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.925	Mean	1.61
Maximum	3.1	Median	0.978
SD	1.011	Std. Error of Mean	0.413
Coefficient of Variation	0.628	Skewness	1.031
Mean of logged Data	0.329	SD of logged Data	0.571

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.442	95% Adjusted-CLT UCL (Chen-1995)	2.474
		95% Modified-t UCL (Johnson-1978)	2.471

Nonparametric Distribution Free UCLs

95% CLT UCL	2.289	95% Jackknife UCL	2.442
95% Standard Bootstrap UCL	2.242	95% Bootstrap-t UCL	28.78
95% Hall's Bootstrap UCL	34.87	95% Percentile Bootstrap UCL	2.26
95% BCA Bootstrap UCL	2.31		
90% Chebyshev(Mean, Sd) UCL	2.848	95% Chebyshev(Mean, Sd) UCL	3.409
97.5% Chebyshev(Mean, Sd) UCL	4.187	99% Chebyshev(Mean, Sd) UCL	5.716

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.409

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.73	Mean	3.458
Maximum	4.61	Median	3.26
SD	0.662	Std. Error of Mean	0.27
Coefficient of Variation	0.192	Skewness	1.155
Mean of logged Data	1.226	SD of logged Data	0.182

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.002	95% Adjusted-CLT UCL (Chen-1995)	4.038
		95% Modified-t UCL (Johnson-1978)	4.024

Nonparametric Distribution Free UCLs

95% CLT UCL	3.902	95% Jackknife UCL	4.002
95% Standard Bootstrap UCL	3.856	95% Bootstrap-t UCL	4.575
95% Hall's Bootstrap UCL	7.508	95% Percentile Bootstrap UCL	3.881
95% BCA Bootstrap UCL	4		
90% Chebyshev(Mean, Sd) UCL	4.269	95% Chebyshev(Mean, Sd) UCL	4.636
97.5% Chebyshev(Mean, Sd) UCL	5.146	99% Chebyshev(Mean, Sd) UCL	6.148

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	5.031
Maximum	8.82	Median	4.173
SD	2.333	Std. Error of Mean	0.952
Coefficient of Variation	0.464	Skewness	0.959
Mean of logged Data	1.532	SD of logged Data	0.441

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.95	95% Adjusted-CLT UCL (Chen-1995)	6.996
		95% Modified-t UCL (Johnson-1978)	7.012

Nonparametric Distribution Free UCLs

95% CLT UCL	6.597	95% Jackknife UCL	6.95
95% Standard Bootstrap UCL	6.419	95% Bootstrap-t UCL	9.664
95% Hall's Bootstrap UCL	7.998	95% Percentile Bootstrap UCL	6.588
95% BCA Bootstrap UCL	6.884		
90% Chebyshev(Mean, Sd) UCL	7.888	95% Chebyshev(Mean, Sd) UCL	9.182
97.5% Chebyshev(Mean, Sd) UCL	10.98	99% Chebyshev(Mean, Sd) UCL	14.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:30:42 AM
From File	40005A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.2	Mean	10.85
Maximum	11.4	Median	10.85
SD	0.505	Std. Error of Mean	0.206
Coefficient of Variation	0.0465	Skewness	-0.0769
Mean of logged Data	2.383	SD of logged Data	0.0466

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.27	95% Adjusted-CLT UCL (Chen-1995)	11.18
		95% Modified-t UCL (Johnson-1978)	11.26

Nonparametric Distribution Free UCLs

95% CLT UCL	11.19	95% Jackknife UCL	11.27
95% Standard Bootstrap UCL	11.16	95% Bootstrap-t UCL	11.25
95% Hall's Bootstrap UCL	11.18	95% Percentile Bootstrap UCL	11.17
95% BCA Bootstrap UCL	11.15		
90% Chebyshev(Mean, Sd) UCL	11.47	95% Chebyshev(Mean, Sd) UCL	11.75
97.5% Chebyshev(Mean, Sd) UCL	12.14	99% Chebyshev(Mean, Sd) UCL	12.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.37	Mean	14.76
Maximum	38.2	Median	10.41
SD	11.56	Std. Error of Mean	4.718
Coefficient of Variation	0.783	Skewness	2.383

Mean of logged Data	2.525	SD of logged Data	0.562

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.26	95% Adjusted-CLT UCL (Chen-1995)	27.42
		95% Modified-t UCL (Johnson-1978)	25.03

Nonparametric Distribution Free UCLs

95% CLT UCL	22.51	95% Jackknife UCL	24.26
95% Standard Bootstrap UCL	21.74	95% Bootstrap-t UCL	71.7
95% Hall's Bootstrap UCL	66.81	95% Percentile Bootstrap UCL	23.66
95% BCA Bootstrap UCL	24.78		
90% Chebyshev(Mean, Sd) UCL	28.91	95% Chebyshev(Mean, Sd) UCL	35.32
97.5% Chebyshev(Mean, Sd) UCL	44.22	99% Chebyshev(Mean, Sd) UCL	61.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	35.32

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.8	Mean	41.28
Maximum	44.4	Median	41.35
SD	2.277	Std. Error of Mean	0.93
Coefficient of Variation	0.0552	Skewness	-0.269
Mean of logged Data	3.719	SD of logged Data	0.0556

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.16	95% Adjusted-CLT UCL (Chen-1995)	42.7
		95% Modified-t UCL (Johnson-1978)	43.14

Nonparametric Distribution Free UCLs

95% CLT UCL	42.81	95% Jackknife UCL	43.16
95% Standard Bootstrap UCL	42.67	95% Bootstrap-t UCL	43.13
95% Hall's Bootstrap UCL	43.13	95% Percentile Bootstrap UCL	42.67
95% BCA Bootstrap UCL	42.58		
90% Chebyshev(Mean, Sd) UCL	44.07	95% Chebyshev(Mean, Sd) UCL	45.34
97.5% Chebyshev(Mean, Sd) UCL	47.09	99% Chebyshev(Mean, Sd) UCL	50.53

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.885	Mean	1.264
Maximum	1.98	Median	0.968
SD	0.503	Std. Error of Mean	0.205
Coefficient of Variation	0.398	Skewness	0.986
Mean of logged Data	0.175	SD of logged Data	0.368

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.678	95% Adjusted-CLT UCL (Chen-1995)	1.69
		95% Modified-t UCL (Johnson-1978)	1.692

Nonparametric Distribution Free UCLs

95% CLT UCL	1.602	95% Jackknife UCL	1.678
95% Standard Bootstrap UCL	1.577	95% Bootstrap-t UCL	5.932
95% Hall's Bootstrap UCL	7.761	95% Percentile Bootstrap UCL	1.596
95% BCA Bootstrap UCL	1.619		
90% Chebyshev(Mean, Sd) UCL	1.88	95% Chebyshev(Mean, Sd) UCL	2.159
97.5% Chebyshev(Mean, Sd) UCL	2.547	99% Chebyshev(Mean, Sd) UCL	3.308

Suggested UCL to Use

95% Student's-t UCL	1.678	or 95% Modified-t UCL	1.692

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.471	Mean	0.505
Maximum	0.525	Median	0.51
SD	0.0204	Std. Error of Mean	0.00832
Coefficient of Variation	0.0404	Skewness	-0.942
Mean of logged Data	-0.685	SD of logged Data	0.0409

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.521	95% Adjusted-CLT UCL (Chen-1995)	0.515
		95% Modified-t UCL (Johnson-1978)	0.521

Nonparametric Distribution Free UCLs

95% CLT UCL	0.518	95% Jackknife UCL	0.521
95% Standard Bootstrap UCL	0.517	95% Bootstrap-t UCL	0.518
95% Hall's Bootstrap UCL	0.514	95% Percentile Bootstrap UCL	0.516
95% BCA Bootstrap UCL	0.515		
90% Chebyshev(Mean, Sd) UCL	0.529	95% Chebyshev(Mean, Sd) UCL	0.541
97.5% Chebyshev(Mean, Sd) UCL	0.556	99% Chebyshev(Mean, Sd) UCL	0.587

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.915	Mean	2.048
Maximum	2.14	Median	2.07
SD	0.0823	Std. Error of Mean	0.0336
Coefficient of Variation	0.0402	Skewness	-0.813
Mean of logged Data	0.716	SD of logged Data	0.0407

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.116	95% Adjusted-CLT UCL (Chen-1995)	2.092
		95% Modified-t UCL (Johnson-1978)	2.114

Nonparametric Distribution Free UCLs

95% CLT UCL	2.104	95% Jackknife UCL	2.116
95% Standard Bootstrap UCL	2.1	95% Bootstrap-t UCL	2.103
95% Hall's Bootstrap UCL	2.092	95% Percentile Bootstrap UCL	2.095
95% BCA Bootstrap UCL	2.088		
90% Chebyshev(Mean, Sd) UCL	2.149	95% Chebyshev(Mean, Sd) UCL	2.195

97.5% Chebyshev(Mean, Sd) UCL	2.258	99% Chebyshev(Mean, Sd) UCL	2.383

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	2.248
Maximum	2.73	Median	2.118
SD	0.338	Std. Error of Mean	0.138
Coefficient of Variation	0.15	Skewness	0.799
Mean of logged Data	0.801	SD of logged Data	0.146

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.526	95% Adjusted-CLT UCL (Chen-1995)	2.523
		95% Modified-t UCL (Johnson-1978)	2.534

Nonparametric Distribution Free UCLs

95% CLT UCL	2.475	95% Jackknife UCL	2.526
95% Standard Bootstrap UCL	2.458	95% Bootstrap-t UCL	2.996
95% Hall's Bootstrap UCL	4.826	95% Percentile Bootstrap UCL	2.465
95% BCA Bootstrap UCL	2.469		
90% Chebyshev(Mean, Sd) UCL	2.662	95% Chebyshev(Mean, Sd) UCL	2.849
97.5% Chebyshev(Mean, Sd) UCL	3.109	99% Chebyshev(Mean, Sd) UCL	3.62

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.995	Mean	2.49
Maximum	3.22	Median	2.205
SD	0.572	Std. Error of Mean	0.234

Coefficient of Variation	0.23	Skewness	0.867
Mean of logged Data	0.892	SD of logged Data	0.219

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.961	95% Adjusted-CLT UCL (Chen-1995)	2.963
		95% Modified-t UCL (Johnson-1978)	2.975

Nonparametric Distribution Free UCLs

95% CLT UCL	2.874	95% Jackknife UCL	2.961
95% Standard Bootstrap UCL	2.836	95% Bootstrap-t UCL	4.596
95% Hall's Bootstrap UCL	6.544	95% Percentile Bootstrap UCL	2.858
95% BCA Bootstrap UCL	2.86		
90% Chebyshev(Mean, Sd) UCL	3.191	95% Chebyshev(Mean, Sd) UCL	3.508
97.5% Chebyshev(Mean, Sd) UCL	3.949	99% Chebyshev(Mean, Sd) UCL	4.815

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.07	Mean	4.288
Maximum	5.88	Median	3.973
SD	1.266	Std. Error of Mean	0.517
Coefficient of Variation	0.295	Skewness	0.355
Mean of logged Data	1.42	SD of logged Data	0.294

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.33	95% Adjusted-CLT UCL (Chen-1995)	5.218
		95% Modified-t UCL (Johnson-1978)	5.342

Nonparametric Distribution Free UCLs

95% CLT UCL	5.138	95% Jackknife UCL	5.33
95% Standard Bootstrap UCL	5.078	95% Bootstrap-t UCL	5.319
95% Hall's Bootstrap UCL	4.92	95% Percentile Bootstrap UCL	5.064
95% BCA Bootstrap UCL	5.175		
90% Chebyshev(Mean, Sd) UCL	5.839	95% Chebyshev(Mean, Sd) UCL	6.541
97.5% Chebyshev(Mean, Sd) UCL	7.516	99% Chebyshev(Mean, Sd) UCL	9.431

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.7	Mean	3.052
Maximum	3.295	Median	3.11
SD	0.226	Std. Error of Mean	0.0924
Coefficient of Variation	0.0741	Skewness	-0.749
Mean of logged Data	1.113	SD of logged Data	0.0758

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.238	95% Adjusted-CLT UCL (Chen-1995)	3.173
		95% Modified-t UCL (Johnson-1978)	3.233

Nonparametric Distribution Free UCLs

95% CLT UCL	3.204	95% Jackknife UCL	3.238
95% Standard Bootstrap UCL	3.192	95% Bootstrap-t UCL	3.21
95% Hall's Bootstrap UCL	3.163	95% Percentile Bootstrap UCL	3.188
95% BCA Bootstrap UCL	3.173		
90% Chebyshev(Mean, Sd) UCL	3.329	95% Chebyshev(Mean, Sd) UCL	3.454
97.5% Chebyshev(Mean, Sd) UCL	3.628	99% Chebyshev(Mean, Sd) UCL	3.971

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.89	Mean	2.044
Maximum	2.14	Median	2.07
SD	0.0906	Std. Error of Mean	0.037
Coefficient of Variation	0.0443	Skewness	-1.047

Mean of logged Data	0.714	SD of logged Data	0.0451

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.119	95% Adjusted-CLT UCL (Chen-1995)	2.088
		95% Modified-t UCL (Johnson-1978)	2.116

Nonparametric Distribution Free UCLs

95% CLT UCL	2.105	95% Jackknife UCL	2.119
95% Standard Bootstrap UCL	2.101	95% Bootstrap-t UCL	2.107
95% Hall's Bootstrap UCL	2.087	95% Percentile Bootstrap UCL	2.096
95% BCA Bootstrap UCL	2.088		
90% Chebyshev(Mean, Sd) UCL	2.155	95% Chebyshev(Mean, Sd) UCL	2.205
97.5% Chebyshev(Mean, Sd) UCL	2.275	99% Chebyshev(Mean, Sd) UCL	2.412

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.995	Mean	3.137
Maximum	4.57	Median	2.855
SD	1.212	Std. Error of Mean	0.495
Coefficient of Variation	0.387	Skewness	0.283
Mean of logged Data	1.079	SD of logged Data	0.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.134	95% Adjusted-CLT UCL (Chen-1995)	4.012
		95% Modified-t UCL (Johnson-1978)	4.144

Nonparametric Distribution Free UCLs

95% CLT UCL	3.951	95% Jackknife UCL	4.134
95% Standard Bootstrap UCL	3.879	95% Bootstrap-t UCL	4.017
95% Hall's Bootstrap UCL	3.63	95% Percentile Bootstrap UCL	3.951
95% BCA Bootstrap UCL	3.812		

90% Chebyshev(Mean, Sd) UCL	4.621	95% Chebyshev(Mean, Sd) UCL	5.294
97.5% Chebyshev(Mean, Sd) UCL	6.228	99% Chebyshev(Mean, Sd) UCL	8.061

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.945	Mean	3.153
Maximum	3.295	Median	3.188
SD	0.128	Std. Error of Mean	0.0524
Coefficient of Variation	0.0407	Skewness	-0.834
Mean of logged Data	1.148	SD of logged Data	0.0412

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.259	95% Adjusted-CLT UCL (Chen-1995)	3.22
		95% Modified-t UCL (Johnson-1978)	3.256

Nonparametric Distribution Free UCLs

95% CLT UCL	3.239	95% Jackknife UCL	3.259
95% Standard Bootstrap UCL	3.231	95% Bootstrap-t UCL	3.238
95% Hall's Bootstrap UCL	3.219	95% Percentile Bootstrap UCL	3.232
95% BCA Bootstrap UCL	3.226		
90% Chebyshev(Mean, Sd) UCL	3.31	95% Chebyshev(Mean, Sd) UCL	3.382
97.5% Chebyshev(Mean, Sd) UCL	3.48	99% Chebyshev(Mean, Sd) UCL	3.674

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.995	Mean	4.075
Maximum	6.77	Median	3.705

SD	2.241	Std. Error of Mean	0.915
Coefficient of Variation	0.55	Skewness	0.176
Mean of logged Data	1.264	SD of logged Data	0.591

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.919	95% Adjusted-CLT UCL (Chen-1995)	5.65
		95% Modified-t UCL (Johnson-1978)	5.93

Nonparametric Distribution Free UCLs

95% CLT UCL	5.58	95% Jackknife UCL	5.919
95% Standard Bootstrap UCL	5.492	95% Bootstrap-t UCL	5.868
95% Hall's Bootstrap UCL	4.869	95% Percentile Bootstrap UCL	5.474
95% BCA Bootstrap UCL	5.4		
90% Chebyshev(Mean, Sd) UCL	6.82	95% Chebyshev(Mean, Sd) UCL	8.063
97.5% Chebyshev(Mean, Sd) UCL	9.789	99% Chebyshev(Mean, Sd) UCL	13.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.175	Mean	1.261
Maximum	1.32	Median	1.275
SD	0.0532	Std. Error of Mean	0.0217
Coefficient of Variation	0.0422	Skewness	-0.808
Mean of logged Data	0.231	SD of logged Data	0.0428

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.305	95% Adjusted-CLT UCL (Chen-1995)	1.289
		95% Modified-t UCL (Johnson-1978)	1.303

Nonparametric Distribution Free UCLs

95% CLT UCL	1.297	95% Jackknife UCL	1.305
95% Standard Bootstrap UCL	1.294	95% Bootstrap-t UCL	1.299
95% Hall's Bootstrap UCL	1.288	95% Percentile Bootstrap UCL	1.293
95% BCA Bootstrap UCL	1.287		
90% Chebyshev(Mean, Sd) UCL	1.326	95% Chebyshev(Mean, Sd) UCL	1.356

97.5% Chebyshev(Mean, Sd) UCL	1.397	99% Chebyshev(Mean, Sd) UCL	1.477

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.81	Mean	3.075
Maximum	3.295	Median	3.11
SD	0.188	Std. Error of Mean	0.0769
Coefficient of Variation	0.0613	Skewness	-0.428
Mean of logged Data	1.122	SD of logged Data	0.0619

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.23	95% Adjusted-CLT UCL (Chen-1995)	3.187
		95% Modified-t UCL (Johnson-1978)	3.228

Nonparametric Distribution Free UCLs

95% CLT UCL	3.201	95% Jackknife UCL	3.23
95% Standard Bootstrap UCL	3.192	95% Bootstrap-t UCL	3.216
95% Hall's Bootstrap UCL	3.169	95% Percentile Bootstrap UCL	3.183
95% BCA Bootstrap UCL	3.178		
90% Chebyshev(Mean, Sd) UCL	3.306	95% Chebyshev(Mean, Sd) UCL	3.41
97.5% Chebyshev(Mean, Sd) UCL	3.555	99% Chebyshev(Mean, Sd) UCL	3.84

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.764	Mean	1.651
Maximum	2.54	Median	1.64
SD	0.839	Std. Error of Mean	0.342
Coefficient of Variation	0.508	Skewness	0.00505
Mean of logged Data	0.379	SD of logged Data	0.555

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.341	95% Adjusted-CLT UCL (Chen-1995)	2.215
		95% Modified-t UCL (Johnson-1978)	2.341

Nonparametric Distribution Free UCLs

95% CLT UCL	2.214	95% Jackknife UCL	2.341
95% Standard Bootstrap UCL	2.152	95% Bootstrap-t UCL	2.393
95% Hall's Bootstrap UCL	1.944	95% Percentile Bootstrap UCL	2.174
95% BCA Bootstrap UCL	2.175		
90% Chebyshev(Mean, Sd) UCL	2.678	95% Chebyshev(Mean, Sd) UCL	3.143
97.5% Chebyshev(Mean, Sd) UCL	3.789	99% Chebyshev(Mean, Sd) UCL	5.058

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.23	Mean	2.898
Maximum	3.295	Median	3.09
SD	0.442	Std. Error of Mean	0.18
Coefficient of Variation	0.153	Skewness	-0.941
Mean of logged Data	1.054	SD of logged Data	0.162

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.262	95% Adjusted-CLT UCL (Chen-1995)	3.121
		95% Modified-t UCL (Johnson-1978)	3.25

Nonparametric Distribution Free UCLs

95% CLT UCL	3.195	95% Jackknife UCL	3.262
95% Standard Bootstrap UCL	3.168	95% Bootstrap-t UCL	3.192
95% Hall's Bootstrap UCL	3.077	95% Percentile Bootstrap UCL	3.173

95% BCA Bootstrap UCL	3.121		
90% Chebyshev(Mean, Sd) UCL	3.44	95% Chebyshev(Mean, Sd) UCL	3.685
97.5% Chebyshev(Mean, Sd) UCL	4.025	99% Chebyshev(Mean, Sd) UCL	4.694

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.07	Mean	4.31
Maximum	5.97	Median	3.898
SD	1.323	Std. Error of Mean	0.54
Coefficient of Variation	0.307	Skewness	0.474
Mean of logged Data	1.422	SD of logged Data	0.303

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.399	95% Adjusted-CLT UCL (Chen-1995)	5.31
		95% Modified-t UCL (Johnson-1978)	5.416

Nonparametric Distribution Free UCLs

95% CLT UCL	5.199	95% Jackknife UCL	5.399
95% Standard Bootstrap UCL	5.108	95% Bootstrap-t UCL	5.652
95% Hall's Bootstrap UCL	4.922	95% Percentile Bootstrap UCL	5.166
95% BCA Bootstrap UCL	5.235		
90% Chebyshev(Mean, Sd) UCL	5.931	95% Chebyshev(Mean, Sd) UCL	6.665
97.5% Chebyshev(Mean, Sd) UCL	7.684	99% Chebyshev(Mean, Sd) UCL	9.686

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:42:42 AM
From File	40005B.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	9.99	Mean	10.78
Maximum	11.9	Median	10.8
SD	0.724	Std. Error of Mean	0.296
Coefficient of Variation	0.0672	Skewness	0.495
Mean of logged Data	2.376	SD of logged Data	0.0666

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.38	95% Adjusted-CLT UCL (Chen-1995)	11.33
		95% Modified-t UCL (Johnson-1978)	11.39

Nonparametric Distribution Free UCLs

95% CLT UCL	11.27	95% Jackknife UCL	11.38
95% Standard Bootstrap UCL	11.22	95% Bootstrap-t UCL	11.49
95% Hall's Bootstrap UCL	11.3	95% Percentile Bootstrap UCL	11.27
95% BCA Bootstrap UCL	11.27		
90% Chebyshev(Mean, Sd) UCL	11.67	95% Chebyshev(Mean, Sd) UCL	12.07
97.5% Chebyshev(Mean, Sd) UCL	12.63	99% Chebyshev(Mean, Sd) UCL	13.72

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	9.37	Mean	10.53
Maximum	14.3	Median	9.96
SD	1.863	Std. Error of Mean	0.761
Coefficient of Variation	0.177	Skewness	2.347
Mean of logged Data	2.343	SD of logged Data	0.157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.06	95% Adjusted-CLT UCL (Chen-1995)	12.56
		95% Modified-t UCL (Johnson-1978)	12.19

Nonparametric Distribution Free UCLs

95% CLT UCL	11.78	95% Jackknife UCL	12.06
95% Standard Bootstrap UCL	11.65	95% Bootstrap-t UCL	17.9
95% Hall's Bootstrap UCL	20.34	95% Percentile Bootstrap UCL	11.94
95% BCA Bootstrap UCL	12.12		
90% Chebyshev(Mean, Sd) UCL	12.81	95% Chebyshev(Mean, Sd) UCL	13.85
97.5% Chebyshev(Mean, Sd) UCL	15.28	99% Chebyshev(Mean, Sd) UCL	18.1

Suggested UCL to Use

95% Student's-t UCL	12.06	or 95% Modified-t UCL	12.19

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.9	Mean	42.48
Maximum	44.7	Median	42.35
SD	1.419	Std. Error of Mean	0.579
Coefficient of Variation	0.0334	Skewness	0.58
Mean of logged Data	3.749	SD of logged Data	0.0332

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.65	95% Adjusted-CLT UCL (Chen-1995)	43.58
		95% Modified-t UCL (Johnson-1978)	43.67

Nonparametric Distribution Free UCLs

95% CLT UCL	43.44	95% Jackknife UCL	43.65
95% Standard Bootstrap UCL	43.38	95% Bootstrap-t UCL	44.02
95% Hall's Bootstrap UCL	43.89	95% Percentile Bootstrap UCL	43.37
95% BCA Bootstrap UCL	43.4		
90% Chebyshev(Mean, Sd) UCL	44.22	95% Chebyshev(Mean, Sd) UCL	45.01
97.5% Chebyshev(Mean, Sd) UCL	46.1	99% Chebyshev(Mean, Sd) UCL	48.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.683	Mean	1.116
Maximum	1.96	Median	0.78
SD	0.598	Std. Error of Mean	0.244
Coefficient of Variation	0.536	Skewness	0.954
Mean of logged Data	6.4852E-4	SD of logged Data	0.495

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.607	95% Adjusted-CLT UCL (Chen-1995)	1.618
		95% Modified-t UCL (Johnson-1978)	1.623

Nonparametric Distribution Free UCLs

95% CLT UCL	1.517	95% Jackknife UCL	1.607
95% Standard Bootstrap UCL	1.476	95% Bootstrap-t UCL	4.628
95% Hall's Bootstrap UCL	7.979	95% Percentile Bootstrap UCL	1.51
95% BCA Bootstrap UCL	1.515		
90% Chebyshev(Mean, Sd) UCL	1.847	95% Chebyshev(Mean, Sd) UCL	2.179
97.5% Chebyshev(Mean, Sd) UCL	2.639	99% Chebyshev(Mean, Sd) UCL	3.543

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.479	Mean	0.508
Maximum	0.545	Median	0.51
SD	0.0258	Std. Error of Mean	0.0106
Coefficient of Variation	0.0509	Skewness	0.137
Mean of logged Data	-0.678	SD of logged Data	0.0508

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.529	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.53

Nonparametric Distribution Free UCLs

95% CLT UCL	0.526	95% Jackknife UCL	0.529
95% Standard Bootstrap UCL	0.524	95% Bootstrap-t UCL	0.531
95% Hall's Bootstrap UCL	0.525	95% Percentile Bootstrap UCL	0.524
95% BCA Bootstrap UCL	0.524		
90% Chebyshev(Mean, Sd) UCL	0.54	95% Chebyshev(Mean, Sd) UCL	0.554
97.5% Chebyshev(Mean, Sd) UCL	0.574	99% Chebyshev(Mean, Sd) UCL	0.613

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.945	Mean	2.048
Maximum	2.125	Median	2.073
SD	0.0819	Std. Error of Mean	0.0334
Coefficient of Variation	0.04	Skewness	-0.573
Mean of logged Data	0.716	SD of logged Data	0.0403

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.115	95% Adjusted-CLT UCL (Chen-1995)	2.094
		95% Modified-t UCL (Johnson-1978)	2.114

Nonparametric Distribution Free UCLs

95% CLT UCL	2.102	95% Jackknife UCL	2.115
95% Standard Bootstrap UCL	2.098	95% Bootstrap-t UCL	2.104
95% Hall's Bootstrap UCL	2.081	95% Percentile Bootstrap UCL	2.094
95% BCA Bootstrap UCL	2.089		
90% Chebyshev(Mean, Sd) UCL	2.148	95% Chebyshev(Mean, Sd) UCL	2.193
97.5% Chebyshev(Mean, Sd) UCL	2.256	99% Chebyshev(Mean, Sd) UCL	2.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.8	Mean	2.013
Maximum	2.13	Median	2.04
SD	0.135	Std. Error of Mean	0.0549
Coefficient of Variation	0.0668	Skewness	-0.738
Mean of logged Data	0.698	SD of logged Data	0.0681

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.124	95% Adjusted-CLT UCL (Chen-1995)	2.086
		95% Modified-t UCL (Johnson-1978)	2.121

Nonparametric Distribution Free UCLs

95% CLT UCL	2.104	95% Jackknife UCL	2.124
95% Standard Bootstrap UCL	2.096	95% Bootstrap-t UCL	2.106
95% Hall's Bootstrap UCL	2.077	95% Percentile Bootstrap UCL	2.096
95% BCA Bootstrap UCL	2.094		
90% Chebyshev(Mean, Sd) UCL	2.178	95% Chebyshev(Mean, Sd) UCL	2.253
97.5% Chebyshev(Mean, Sd) UCL	2.356	99% Chebyshev(Mean, Sd) UCL	2.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.95	Mean	2.223
Maximum	2.995	Median	2.108
SD	0.384	Std. Error of Mean	0.157
Coefficient of Variation	0.173	Skewness	2.288
Mean of logged Data	0.788	SD of logged Data	0.155

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.538	95% Adjusted-CLT UCL (Chen-1995)	2.637
		95% Modified-t UCL (Johnson-1978)	2.563

Nonparametric Distribution Free UCLs

95% CLT UCL	2.48	95% Jackknife UCL	2.538
95% Standard Bootstrap UCL	2.46	95% Bootstrap-t UCL	3.729
95% Hall's Bootstrap UCL	4.055	95% Percentile Bootstrap UCL	2.489
95% BCA Bootstrap UCL	2.549		
90% Chebyshev(Mean, Sd) UCL	2.693	95% Chebyshev(Mean, Sd) UCL	2.906
97.5% Chebyshev(Mean, Sd) UCL	3.201	99% Chebyshev(Mean, Sd) UCL	3.782

Suggested UCL to Use

95% Student's-t UCL	2.538	or 95% Modified-t UCL	2.563

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.995	Mean	3.853
Maximum	4.76	Median	3.803
SD	0.763	Std. Error of Mean	0.312
Coefficient of Variation	0.198	Skewness	0.0581
Mean of logged Data	1.332	SD of logged Data	0.2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.481	95% Adjusted-CLT UCL (Chen-1995)	4.374
		95% Modified-t UCL (Johnson-1978)	4.482

Nonparametric Distribution Free UCLs

95% CLT UCL	4.366	95% Jackknife UCL	4.481
95% Standard Bootstrap UCL	4.332	95% Bootstrap-t UCL	4.567
95% Hall's Bootstrap UCL	4.151	95% Percentile Bootstrap UCL	4.327
95% BCA Bootstrap UCL	4.3		
90% Chebyshev(Mean, Sd) UCL	4.788	95% Chebyshev(Mean, Sd) UCL	5.211
97.5% Chebyshev(Mean, Sd) UCL	5.799	99% Chebyshev(Mean, Sd) UCL	6.953

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.22	Mean	3.019
Maximum	3.265	Median	3.188
SD	0.404	Std. Error of Mean	0.165
Coefficient of Variation	0.134	Skewness	-2.137
Mean of logged Data	1.096	SD of logged Data	0.15

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.352	95% Adjusted-CLT UCL (Chen-1995)	3.137
		95% Modified-t UCL (Johnson-1978)	3.328

Nonparametric Distribution Free UCLs

95% CLT UCL	3.291	95% Jackknife UCL	3.352
95% Standard Bootstrap UCL	3.259	95% Bootstrap-t UCL	3.234
95% Hall's Bootstrap UCL	3.173	95% Percentile Bootstrap UCL	3.218
95% BCA Bootstrap UCL	3.2		
90% Chebyshev(Mean, Sd) UCL	3.514	95% Chebyshev(Mean, Sd) UCL	3.739
97.5% Chebyshev(Mean, Sd) UCL	4.05	99% Chebyshev(Mean, Sd) UCL	4.661

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.945	Mean	2.048
Maximum	2.125	Median	2.073
SD	0.0819	Std. Error of Mean	0.0334
Coefficient of Variation	0.04	Skewness	-0.573
Mean of logged Data	0.716	SD of logged Data	0.0403

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.115	95% Adjusted-CLT UCL (Chen-1995)	2.094
		95% Modified-t UCL (Johnson-1978)	2.114

Nonparametric Distribution Free UCLs

95% CLT UCL	2.102	95% Jackknife UCL	2.115
95% Standard Bootstrap UCL	2.097	95% Bootstrap-t UCL	2.106
95% Hall's Bootstrap UCL	2.081	95% Percentile Bootstrap UCL	2.095
95% BCA Bootstrap UCL	2.089		
90% Chebyshev(Mean, Sd) UCL	2.148	95% Chebyshev(Mean, Sd) UCL	2.193
97.5% Chebyshev(Mean, Sd) UCL	2.256	99% Chebyshev(Mean, Sd) UCL	2.38

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.945	Mean	2.787
Maximum	3.61	Median	2.778
SD	0.797	Std. Error of Mean	0.325
Coefficient of Variation	0.286	Skewness	-0.00587
Mean of logged Data	0.989	SD of logged Data	0.294

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.442	95% Adjusted-CLT UCL (Chen-1995)	3.321
		95% Modified-t UCL (Johnson-1978)	3.442

Nonparametric Distribution Free UCLs

95% CLT UCL	3.322	95% Jackknife UCL	3.442
95% Standard Bootstrap UCL	3.277	95% Bootstrap-t UCL	3.452
95% Hall's Bootstrap UCL	3.061	95% Percentile Bootstrap UCL	3.282
95% BCA Bootstrap UCL	3.282		
90% Chebyshev(Mean, Sd) UCL	3.763	95% Chebyshev(Mean, Sd) UCL	4.205
97.5% Chebyshev(Mean, Sd) UCL	4.819	99% Chebyshev(Mean, Sd) UCL	6.025

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.995	Mean	3.149
Maximum	3.265	Median	3.188
SD	0.124	Std. Error of Mean	0.0508
Coefficient of Variation	0.0395	Skewness	-0.565
Mean of logged Data	1.146	SD of logged Data	0.0398

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.252	95% Adjusted-CLT UCL (Chen-1995)	3.22
		95% Modified-t UCL (Johnson-1978)	3.25

Nonparametric Distribution Free UCLs

95% CLT UCL	3.233	95% Jackknife UCL	3.252
95% Standard Bootstrap UCL	3.223	95% Bootstrap-t UCL	3.238
95% Hall's Bootstrap UCL	3.201	95% Percentile Bootstrap UCL	3.22
95% BCA Bootstrap UCL	3.213		
90% Chebyshev(Mean, Sd) UCL	3.302	95% Chebyshev(Mean, Sd) UCL	3.371
97.5% Chebyshev(Mean, Sd) UCL	3.467	99% Chebyshev(Mean, Sd) UCL	3.655

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.945	Mean	3.746
Maximum	5.86	Median	3.46
SD	1.917	Std. Error of Mean	0.783
Coefficient of Variation	0.512	Skewness	0.134
Mean of logged Data	1.2	SD of logged Data	0.546

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.323	95% Adjusted-CLT UCL (Chen-1995)	5.079
		95% Modified-t UCL (Johnson-1978)	5.33

Nonparametric Distribution Free UCLs

95% CLT UCL	5.033	95% Jackknife UCL	5.323
95% Standard Bootstrap UCL	4.943	95% Bootstrap-t UCL	5.149
95% Hall's Bootstrap UCL	4.423	95% Percentile Bootstrap UCL	4.988
95% BCA Bootstrap UCL	4.966		
90% Chebyshev(Mean, Sd) UCL	6.094	95% Chebyshev(Mean, Sd) UCL	7.158
97.5% Chebyshev(Mean, Sd) UCL	8.634	99% Chebyshev(Mean, Sd) UCL	11.53

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.2	Mean	1.26
Maximum	1.305	Median	1.275
SD	0.0493	Std. Error of Mean	0.0201
Coefficient of Variation	0.0391	Skewness	-0.558
Mean of logged Data	0.23	SD of logged Data	0.0394

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.301	95% Adjusted-CLT UCL (Chen-1995)	1.288
		95% Modified-t UCL (Johnson-1978)	1.3

Nonparametric Distribution Free UCLs

95% CLT UCL	1.293	95% Jackknife UCL	1.301
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.32	95% Chebyshev(Mean, Sd) UCL	1.348
97.5% Chebyshev(Mean, Sd) UCL	1.386	99% Chebyshev(Mean, Sd) UCL	1.46

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.26	Mean	2.887
Maximum	3.265	Median	3.073
SD	0.448	Std. Error of Mean	0.183
Coefficient of Variation	0.155	Skewness	-0.811
Mean of logged Data	1.049	SD of logged Data	0.164

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.255	95% Adjusted-CLT UCL (Chen-1995)	3.123
		95% Modified-t UCL (Johnson-1978)	3.245

Nonparametric Distribution Free UCLs

95% CLT UCL	3.187	95% Jackknife UCL	3.255
95% Standard Bootstrap UCL	3.162	95% Bootstrap-t UCL	3.183
95% Hall's Bootstrap UCL	3.074	95% Percentile Bootstrap UCL	3.153
95% BCA Bootstrap UCL	3.124		
90% Chebyshev(Mean, Sd) UCL	3.435	95% Chebyshev(Mean, Sd) UCL	3.684
97.5% Chebyshev(Mean, Sd) UCL	4.029	99% Chebyshev(Mean, Sd) UCL	4.706

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.957	Mean	1.645
Maximum	2.34	Median	1.755
SD	0.564	Std. Error of Mean	0.23

Coefficient of Variation	0.343	Skewness	-0.18
Mean of logged Data	0.443	SD of logged Data	0.371

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.108	95% Adjusted-CLT UCL (Chen-1995)	2.005
		95% Modified-t UCL (Johnson-1978)	2.105

Nonparametric Distribution Free UCLs

95% CLT UCL	2.023	95% Jackknife UCL	2.108
95% Standard Bootstrap UCL	1.99	95% Bootstrap-t UCL	2.08
95% Hall's Bootstrap UCL	1.928	95% Percentile Bootstrap UCL	1.978
95% BCA Bootstrap UCL	1.957		
90% Chebyshev(Mean, Sd) UCL	2.335	95% Chebyshev(Mean, Sd) UCL	2.647
97.5% Chebyshev(Mean, Sd) UCL	3.081	99% Chebyshev(Mean, Sd) UCL	3.934

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.77	Mean	3.107
Maximum	3.265	Median	3.175
SD	0.192	Std. Error of Mean	0.0785
Coefficient of Variation	0.0619	Skewness	-1.31
Mean of logged Data	1.132	SD of logged Data	0.0638

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.265	95% Adjusted-CLT UCL (Chen-1995)	3.191
		95% Modified-t UCL (Johnson-1978)	3.258

Nonparametric Distribution Free UCLs

95% CLT UCL	3.236	95% Jackknife UCL	3.265
95% Standard Bootstrap UCL	3.224	95% Bootstrap-t UCL	3.22
95% Hall's Bootstrap UCL	3.191	95% Percentile Bootstrap UCL	3.218

95% BCA Bootstrap UCL	3.199		
90% Chebyshev(Mean, Sd) UCL	3.342	95% Chebyshev(Mean, Sd) UCL	3.449
97.5% Chebyshev(Mean, Sd) UCL	3.597	99% Chebyshev(Mean, Sd) UCL	3.888

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.995	Mean	4.05
Maximum	5.28	Median	3.833
SD	1.009	Std. Error of Mean	0.412
Coefficient of Variation	0.249	Skewness	0.266
Mean of logged Data	1.373	SD of logged Data	0.249

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.88	95% Adjusted-CLT UCL (Chen-1995)	4.775
		95% Modified-t UCL (Johnson-1978)	4.888

Nonparametric Distribution Free UCLs

95% CLT UCL	4.728	95% Jackknife UCL	4.88
95% Standard Bootstrap UCL	4.685	95% Bootstrap-t UCL	4.833
95% Hall's Bootstrap UCL	4.496	95% Percentile Bootstrap UCL	4.707
95% BCA Bootstrap UCL	4.663		
90% Chebyshev(Mean, Sd) UCL	5.286	95% Chebyshev(Mean, Sd) UCL	5.846
97.5% Chebyshev(Mean, Sd) UCL	6.623	99% Chebyshev(Mean, Sd) UCL	8.149

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/26/2021 1:11:55 PM
From File	40005C.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.5	Mean	12.97
Maximum	15.1	Median	13
SD	2.081	Std. Error of Mean	0.85
Coefficient of Variation	0.16	Skewness	-0.075
Mean of logged Data	2.551	SD of logged Data	0.163

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.68	95% Adjusted-CLT UCL (Chen-1995)	14.34
		95% Modified-t UCL (Johnson-1978)	14.67

Nonparametric Distribution Free UCLs

95% CLT UCL	14.36	95% Jackknife UCL	14.68
95% Standard Bootstrap UCL	14.24	95% Bootstrap-t UCL	14.74
95% Hall's Bootstrap UCL	13.75	95% Percentile Bootstrap UCL	14.27
95% BCA Bootstrap UCL	14.17		
90% Chebyshev(Mean, Sd) UCL	15.52	95% Chebyshev(Mean, Sd) UCL	16.67
97.5% Chebyshev(Mean, Sd) UCL	18.27	99% Chebyshev(Mean, Sd) UCL	21.42

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.3	Mean	11.23
Maximum	11.9	Median	11.3
SD	0.589	Std. Error of Mean	0.24
Coefficient of Variation	0.0524	Skewness	-0.64

Mean of logged Data	2.418	SD of logged Data	0.0531

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.72	95% Adjusted-CLT UCL (Chen-1995)	11.56
		95% Modified-t UCL (Johnson-1978)	11.71

Nonparametric Distribution Free UCLs

95% CLT UCL	11.63	95% Jackknife UCL	11.72
95% Standard Bootstrap UCL	11.59	95% Bootstrap-t UCL	11.64
95% Hall's Bootstrap UCL	11.55	95% Percentile Bootstrap UCL	11.57
95% BCA Bootstrap UCL	11.57		
90% Chebyshev(Mean, Sd) UCL	11.95	95% Chebyshev(Mean, Sd) UCL	12.28
97.5% Chebyshev(Mean, Sd) UCL	12.73	99% Chebyshev(Mean, Sd) UCL	13.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	40.4	Mean	46.95
Maximum	52.7	Median	46.95
SD	5.152	Std. Error of Mean	2.103
Coefficient of Variation	0.11	Skewness	-0.117
Mean of logged Data	3.844	SD of logged Data	0.111

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.19	95% Adjusted-CLT UCL (Chen-1995)	50.3
		95% Modified-t UCL (Johnson-1978)	51.17

Nonparametric Distribution Free UCLs

95% CLT UCL	50.41	95% Jackknife UCL	51.19
95% Standard Bootstrap UCL	50.09	95% Bootstrap-t UCL	51.34
95% Hall's Bootstrap UCL	49.17	95% Percentile Bootstrap UCL	50.18
95% BCA Bootstrap UCL	49.95		

90% Chebyshev(Mean, Sd) UCL	53.26	95% Chebyshev(Mean, Sd) UCL	56.12
97.5% Chebyshev(Mean, Sd) UCL	60.08	99% Chebyshev(Mean, Sd) UCL	67.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.9	Mean	1.963
Maximum	2	Median	1.97
SD	0.0383	Std. Error of Mean	0.0156
Coefficient of Variation	0.0195	Skewness	-0.895
Mean of logged Data	0.674	SD of logged Data	0.0196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.995	95% Adjusted-CLT UCL (Chen-1995)	1.983
		95% Modified-t UCL (Johnson-1978)	1.994

Nonparametric Distribution Free UCLs

95% CLT UCL	1.989	95% Jackknife UCL	1.995
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.01	95% Chebyshev(Mean, Sd) UCL	2.031
97.5% Chebyshev(Mean, Sd) UCL	2.061	99% Chebyshev(Mean, Sd) UCL	2.119

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5

		Number of Missing Observations	0
Minimum	0.505	Mean	0.523
Maximum	0.535	Median	0.525
SD	0.0108	Std. Error of Mean	0.00443
Coefficient of Variation	0.0207	Skewness	-0.795
Mean of logged Data	-0.649	SD of logged Data	0.0209

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.531	95% Adjusted-CLT UCL (Chen-1995)	0.528
		95% Modified-t UCL (Johnson-1978)	0.531

Nonparametric Distribution Free UCLs

95% CLT UCL	0.53	95% Jackknife UCL	0.531
95% Standard Bootstrap UCL	0.529	95% Bootstrap-t UCL	0.53
95% Hall's Bootstrap UCL	0.528	95% Percentile Bootstrap UCL	0.529
95% BCA Bootstrap UCL	0.528		
90% Chebyshev(Mean, Sd) UCL	0.536	95% Chebyshev(Mean, Sd) UCL	0.542
97.5% Chebyshev(Mean, Sd) UCL	0.55	99% Chebyshev(Mean, Sd) UCL	0.567

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	2.125
Maximum	2.165	Median	2.135
SD	0.0415	Std. Error of Mean	0.0169
Coefficient of Variation	0.0195	Skewness	-1.044
Mean of logged Data	0.754	SD of logged Data	0.0197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.159	95% Adjusted-CLT UCL (Chen-1995)	2.145
		95% Modified-t UCL (Johnson-1978)	2.158

Nonparametric Distribution Free UCLs

95% CLT UCL	2.153	95% Jackknife UCL	2.159
95% Standard Bootstrap UCL	2.151	95% Bootstrap-t UCL	2.15
95% Hall's Bootstrap UCL	2.145	95% Percentile Bootstrap UCL	2.148
95% BCA Bootstrap UCL	2.146		
90% Chebyshev(Mean, Sd) UCL	2.176	95% Chebyshev(Mean, Sd) UCL	2.199
97.5% Chebyshev(Mean, Sd) UCL	2.231	99% Chebyshev(Mean, Sd) UCL	2.293

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	2.289
Maximum	2.97	Median	2.125
SD	0.35	Std. Error of Mean	0.143
Coefficient of Variation	0.153	Skewness	2.008
Mean of logged Data	0.819	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.577	95% Adjusted-CLT UCL (Chen-1995)	2.65
		95% Modified-t UCL (Johnson-1978)	2.597

Nonparametric Distribution Free UCLs

95% CLT UCL	2.524	95% Jackknife UCL	2.577
95% Standard Bootstrap UCL	2.499	95% Bootstrap-t UCL	4.485
95% Hall's Bootstrap UCL	4.562	95% Percentile Bootstrap UCL	2.531
95% BCA Bootstrap UCL	2.588		
90% Chebyshev(Mean, Sd) UCL	2.718	95% Chebyshev(Mean, Sd) UCL	2.912
97.5% Chebyshev(Mean, Sd) UCL	3.182	99% Chebyshev(Mean, Sd) UCL	3.712

Suggested UCL to Use

95% Student's-t UCL	2.577	or 95% Modified-t UCL	2.597

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	2.404
Maximum	3.01	Median	2.325
SD	0.377	Std. Error of Mean	0.154
Coefficient of Variation	0.157	Skewness	0.788
Mean of logged Data	0.867	SD of logged Data	0.153

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.715	95% Adjusted-CLT UCL (Chen-1995)	2.711
		95% Modified-t UCL (Johnson-1978)	2.723

Nonparametric Distribution Free UCLs

95% CLT UCL	2.658	95% Jackknife UCL	2.715
95% Standard Bootstrap UCL	2.636	95% Bootstrap-t UCL	2.825
95% Hall's Bootstrap UCL	2.629	95% Percentile Bootstrap UCL	2.64
95% BCA Bootstrap UCL	2.658		
90% Chebyshev(Mean, Sd) UCL	2.866	95% Chebyshev(Mean, Sd) UCL	3.076
97.5% Chebyshev(Mean, Sd) UCL	3.367	99% Chebyshev(Mean, Sd) UCL	3.937

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	4.356
Maximum	6.19	Median	4.2
SD	1.298	Std. Error of Mean	0.53
Coefficient of Variation	0.298	Skewness	0.378
Mean of logged Data	1.435	SD of logged Data	0.297

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.423	95% Adjusted-CLT UCL (Chen-1995)	5.315
		95% Modified-t UCL (Johnson-1978)	5.437

Nonparametric Distribution Free UCLs

95% CLT UCL	5.227	95% Jackknife UCL	5.423
95% Standard Bootstrap UCL	5.151	95% Bootstrap-t UCL	5.699
95% Hall's Bootstrap UCL	4.922	95% Percentile Bootstrap UCL	5.172
95% BCA Bootstrap UCL	5.18		
90% Chebyshev(Mean, Sd) UCL	5.945	95% Chebyshev(Mean, Sd) UCL	6.665
97.5% Chebyshev(Mean, Sd) UCL	7.665	99% Chebyshev(Mean, Sd) UCL	9.628

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.45	Mean	3.066
Maximum	3.29	Median	3.198
SD	0.322	Std. Error of Mean	0.132
Coefficient of Variation	0.105	Skewness	-1.86
Mean of logged Data	1.115	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.331	95% Adjusted-CLT UCL (Chen-1995)	3.175
		95% Modified-t UCL (Johnson-1978)	3.314

Nonparametric Distribution Free UCLs

95% CLT UCL	3.282	95% Jackknife UCL	3.331
95% Standard Bootstrap UCL	3.26	95% Bootstrap-t UCL	3.244
95% Hall's Bootstrap UCL	3.198	95% Percentile Bootstrap UCL	3.237
95% BCA Bootstrap UCL	3.205		
90% Chebyshev(Mean, Sd) UCL	3.461	95% Chebyshev(Mean, Sd) UCL	3.639
97.5% Chebyshev(Mean, Sd) UCL	3.888	99% Chebyshev(Mean, Sd) UCL	4.375

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	2.203
Maximum	2.44	Median	2.148
SD	0.149	Std. Error of Mean	0.061
Coefficient of Variation	0.0678	Skewness	0.942
Mean of logged Data	0.788	SD of logged Data	0.0665

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.326	95% Adjusted-CLT UCL (Chen-1995)	2.329
		95% Modified-t UCL (Johnson-1978)	2.33

Nonparametric Distribution Free UCLs

95% CLT UCL	2.304	95% Jackknife UCL	2.326
95% Standard Bootstrap UCL	2.295	95% Bootstrap-t UCL	2.513
95% Hall's Bootstrap UCL	3.154	95% Percentile Bootstrap UCL	2.306
95% BCA Bootstrap UCL	2.306		
90% Chebyshev(Mean, Sd) UCL	2.386	95% Chebyshev(Mean, Sd) UCL	2.469
97.5% Chebyshev(Mean, Sd) UCL	2.584	99% Chebyshev(Mean, Sd) UCL	2.81

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.055	Mean	3.243
Maximum	5.06	Median	3
SD	1.315	Std. Error of Mean	0.537
Coefficient of Variation	0.406	Skewness	0.356
Mean of logged Data	1.106	SD of logged Data	0.411

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.324	95% Adjusted-CLT UCL (Chen-1995)	4.209
		95% Modified-t UCL (Johnson-1978)	4.337

Nonparametric Distribution Free UCLs

95% CLT UCL	4.125	95% Jackknife UCL	4.324

95% Standard Bootstrap UCL	4.048	95% Bootstrap-t UCL	4.439
95% Hall's Bootstrap UCL	3.786	95% Percentile Bootstrap UCL	4.088
95% BCA Bootstrap UCL	4.1		
90% Chebyshev(Mean, Sd) UCL	4.853	95% Chebyshev(Mean, Sd) UCL	5.582
97.5% Chebyshev(Mean, Sd) UCL	6.595	99% Chebyshev(Mean, Sd) UCL	8.584

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	3.27
Maximum	3.33	Median	3.285
SD	0.0628	Std. Error of Mean	0.0257
Coefficient of Variation	0.0192	Skewness	-1.003
Mean of logged Data	1.185	SD of logged Data	0.0193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.322	95% Adjusted-CLT UCL (Chen-1995)	3.301
		95% Modified-t UCL (Johnson-1978)	3.32

Nonparametric Distribution Free UCLs

95% CLT UCL	3.312	95% Jackknife UCL	3.322
95% Standard Bootstrap UCL	3.31	95% Bootstrap-t UCL	3.31
95% Hall's Bootstrap UCL	3.3	95% Percentile Bootstrap UCL	3.306
95% BCA Bootstrap UCL	3.303		
90% Chebyshev(Mean, Sd) UCL	3.347	95% Chebyshev(Mean, Sd) UCL	3.382
97.5% Chebyshev(Mean, Sd) UCL	3.43	99% Chebyshev(Mean, Sd) UCL	3.525

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	1.99	Mean	3.308
Maximum	6.38	Median	2.145
SD	1.938	Std. Error of Mean	0.791
Coefficient of Variation	0.586	Skewness	1.141
Mean of logged Data	1.07	SD of logged Data	0.527

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.901	95% Adjusted-CLT UCL (Chen-1995)	5.002
		95% Modified-t UCL (Johnson-1978)	4.963

Nonparametric Distribution Free UCLs

95% CLT UCL	4.609	95% Jackknife UCL	4.901
95% Standard Bootstrap UCL	4.494	95% Bootstrap-t UCL	37.62
95% Hall's Bootstrap UCL	32.64	95% Percentile Bootstrap UCL	4.552
95% BCA Bootstrap UCL	4.732		
90% Chebyshev(Mean, Sd) UCL	5.68	95% Chebyshev(Mean, Sd) UCL	6.755
97.5% Chebyshev(Mean, Sd) UCL	8.247	99% Chebyshev(Mean, Sd) UCL	11.18

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 6.755

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.265	Mean	1.308
Maximum	1.33	Median	1.315
SD	0.0248	Std. Error of Mean	0.0101
Coefficient of Variation	0.019	Skewness	-1.23
Mean of logged Data	0.269	SD of logged Data	0.0191

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.329	95% Adjusted-CLT UCL (Chen-1995)	1.32
		95% Modified-t UCL (Johnson-1978)	1.328

Nonparametric Distribution Free UCLs

95% CLT UCL	1.325	95% Jackknife UCL	1.329
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.339	95% Chebyshev(Mean, Sd) UCL	1.353
97.5% Chebyshev(Mean, Sd) UCL	1.372	99% Chebyshev(Mean, Sd) UCL	1.409

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.58	Mean	2.993
Maximum	3.28	Median	3.128
SD	0.315	Std. Error of Mean	0.128
Coefficient of Variation	0.105	Skewness	-0.799
Mean of logged Data	1.091	SD of logged Data	0.109

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.251	95% Adjusted-CLT UCL (Chen-1995)	3.159
		95% Modified-t UCL (Johnson-1978)	3.244

Nonparametric Distribution Free UCLs

95% CLT UCL	3.204	95% Jackknife UCL	3.251
95% Standard Bootstrap UCL	3.189	95% Bootstrap-t UCL	3.196
95% Hall's Bootstrap UCL	3.122	95% Percentile Bootstrap UCL	3.189
95% BCA Bootstrap UCL	3.16		
90% Chebyshev(Mean, Sd) UCL	3.378	95% Chebyshev(Mean, Sd) UCL	3.552
97.5% Chebyshev(Mean, Sd) UCL	3.795	99% Chebyshev(Mean, Sd) UCL	4.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.806	Mean	1.078
Maximum	1.51	Median	0.975
SD	0.257	Std. Error of Mean	0.105
Coefficient of Variation	0.238	Skewness	1.088
Mean of logged Data	0.0528	SD of logged Data	0.226

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.289	95% Adjusted-CLT UCL (Chen-1995)	1.3
		95% Modified-t UCL (Johnson-1978)	1.296

Nonparametric Distribution Free UCLs

95% CLT UCL	1.25	95% Jackknife UCL	1.289
95% Standard Bootstrap UCL	1.234	95% Bootstrap-t UCL	1.624
95% Hall's Bootstrap UCL	2.739	95% Percentile Bootstrap UCL	1.245
95% BCA Bootstrap UCL	1.247		
90% Chebyshev(Mean, Sd) UCL	1.392	95% Chebyshev(Mean, Sd) UCL	1.534
97.5% Chebyshev(Mean, Sd) UCL	1.732	99% Chebyshev(Mean, Sd) UCL	2.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	3.298
Maximum	3.46	Median	3.303
SD	0.101	Std. Error of Mean	0.0411
Coefficient of Variation	0.0305	Skewness	0.465
Mean of logged Data	1.193	SD of logged Data	0.0304

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.381	95% Adjusted-CLT UCL (Chen-1995)	3.374
		95% Modified-t UCL (Johnson-1978)	3.382

Nonparametric Distribution Free UCLs

95% CLT UCL	3.366	95% Jackknife UCL	3.381
95% Standard Bootstrap UCL	3.361	95% Bootstrap-t UCL	3.39
95% Hall's Bootstrap UCL	3.398	95% Percentile Bootstrap UCL	3.363
95% BCA Bootstrap UCL	3.368		
90% Chebyshev(Mean, Sd) UCL	3.422	95% Chebyshev(Mean, Sd) UCL	3.477
97.5% Chebyshev(Mean, Sd) UCL	3.555	99% Chebyshev(Mean, Sd) UCL	3.707

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	4.276
Maximum	5.93	Median	3.965
SD	1.221	Std. Error of Mean	0.499
Coefficient of Variation	0.286	Skewness	0.411
Mean of logged Data	1.419	SD of logged Data	0.283

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.281	95% Adjusted-CLT UCL (Chen-1995)	5.185
		95% Modified-t UCL (Johnson-1978)	5.295

Nonparametric Distribution Free UCLs

95% CLT UCL	5.096	95% Jackknife UCL	5.281
95% Standard Bootstrap UCL	5.029	95% Bootstrap-t UCL	5.243
95% Hall's Bootstrap UCL	4.857	95% Percentile Bootstrap UCL	5.038
95% BCA Bootstrap UCL	5.053		
90% Chebyshev(Mean, Sd) UCL	5.772	95% Chebyshev(Mean, Sd) UCL	6.449
97.5% Chebyshev(Mean, Sd) UCL	7.39	99% Chebyshev(Mean, Sd) UCL	9.237

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:45:15 AM
From File	40005D.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.1	Mean	13.98
Maximum	17.2	Median	13.55
SD	2.112	Std. Error of Mean	0.862
Coefficient of Variation	0.151	Skewness	0.604
Mean of logged Data	2.629	SD of logged Data	0.148

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.72	95% Adjusted-CLT UCL (Chen-1995)	15.63
		95% Modified-t UCL (Johnson-1978)	15.76

Nonparametric Distribution Free UCLs

95% CLT UCL	15.4	95% Jackknife UCL	15.72
95% Standard Bootstrap UCL	15.29	95% Bootstrap-t UCL	16.14
95% Hall's Bootstrap UCL	15.06	95% Percentile Bootstrap UCL	15.27
95% BCA Bootstrap UCL	15.33		
90% Chebyshev(Mean, Sd) UCL	16.57	95% Chebyshev(Mean, Sd) UCL	17.74
97.5% Chebyshev(Mean, Sd) UCL	19.37	99% Chebyshev(Mean, Sd) UCL	22.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	11.2	Mean	11.58
Maximum	12.7	Median	11.25
SD	0.611	Std. Error of Mean	0.25
Coefficient of Variation	0.0528	Skewness	1.619
Mean of logged Data	2.448	SD of logged Data	0.0514

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.09	95% Adjusted-CLT UCL (Chen-1995)	12.17
		95% Modified-t UCL (Johnson-1978)	12.11

Nonparametric Distribution Free UCLs

95% CLT UCL	11.99	95% Jackknife UCL	12.09
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.33	95% Chebyshev(Mean, Sd) UCL	12.67
97.5% Chebyshev(Mean, Sd) UCL	13.14	99% Chebyshev(Mean, Sd) UCL	14.07

Suggested UCL to Use

95% Student's-t UCL	12.09	or 95% Modified-t UCL	12.11

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.1	Mean	49.83
Maximum	57.1	Median	48.9
SD	4.894	Std. Error of Mean	1.998
Coefficient of Variation	0.0982	Skewness	0.549
Mean of logged Data	3.905	SD of logged Data	0.0969

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.86	95% Adjusted-CLT UCL (Chen-1995)	53.6
		95% Modified-t UCL (Johnson-1978)	53.93

Nonparametric Distribution Free UCLs

95% CLT UCL	53.12	95% Jackknife UCL	53.86
95% Standard Bootstrap UCL	52.84	95% Bootstrap-t UCL	54.27
95% Hall's Bootstrap UCL	52.47	95% Percentile Bootstrap UCL	52.98
95% BCA Bootstrap UCL	53.42		
90% Chebyshev(Mean, Sd) UCL	55.83	95% Chebyshev(Mean, Sd) UCL	58.54
97.5% Chebyshev(Mean, Sd) UCL	62.31	99% Chebyshev(Mean, Sd) UCL	69.71

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.972	Mean	1.602
Maximum	1.93	Median	1.885
SD	0.47	Std. Error of Mean	0.192
Coefficient of Variation	0.293	Skewness	-0.966
Mean of logged Data	0.428	SD of logged Data	0.335

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.989	95% Adjusted-CLT UCL (Chen-1995)	1.837
		95% Modified-t UCL (Johnson-1978)	1.976

Nonparametric Distribution Free UCLs

95% CLT UCL	1.918	95% Jackknife UCL	1.989
95% Standard Bootstrap UCL	1.891	95% Bootstrap-t UCL	1.906
95% Hall's Bootstrap UCL	1.793	95% Percentile Bootstrap UCL	1.903
95% BCA Bootstrap UCL	1.775		
90% Chebyshev(Mean, Sd) UCL	2.178	95% Chebyshev(Mean, Sd) UCL	2.438
97.5% Chebyshev(Mean, Sd) UCL	2.8	99% Chebyshev(Mean, Sd) UCL	3.511

Suggested UCL to Use

95% Student's-t UCL	1.989	or 95% Modified-t UCL	1.976

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.5	Mean	0.512
Maximum	0.525	Median	0.513
SD	0.00876	Std. Error of Mean	0.00357
Coefficient of Variation	0.0171	Skewness	0.248
Mean of logged Data	-0.67	SD of logged Data	0.0171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.519	95% Adjusted-CLT UCL (Chen-1995)	0.518
		95% Modified-t UCL (Johnson-1978)	0.519

Nonparametric Distribution Free UCLs

95% CLT UCL	0.518	95% Jackknife UCL	0.519
95% Standard Bootstrap UCL	0.517	95% Bootstrap-t UCL	0.519
95% Hall's Bootstrap UCL	0.519	95% Percentile Bootstrap UCL	0.518
95% BCA Bootstrap UCL	0.518		
90% Chebyshev(Mean, Sd) UCL	0.522	95% Chebyshev(Mean, Sd) UCL	0.527
97.5% Chebyshev(Mean, Sd) UCL	0.534	99% Chebyshev(Mean, Sd) UCL	0.547

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.04	Mean	2.08
Maximum	2.13	Median	2.083
SD	0.0327	Std. Error of Mean	0.0134
Coefficient of Variation	0.0157	Skewness	0.328
Mean of logged Data	0.732	SD of logged Data	0.0157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.107	95% Adjusted-CLT UCL (Chen-1995)	2.104
		95% Modified-t UCL (Johnson-1978)	2.107

Nonparametric Distribution Free UCLs

95% CLT UCL	2.102	95% Jackknife UCL	2.107
95% Standard Bootstrap UCL	2.101	95% Bootstrap-t UCL	2.108
95% Hall's Bootstrap UCL	2.105	95% Percentile Bootstrap UCL	2.101
95% BCA Bootstrap UCL	2.101		
90% Chebyshev(Mean, Sd) UCL	2.12	95% Chebyshev(Mean, Sd) UCL	2.138
97.5% Chebyshev(Mean, Sd) UCL	2.163	99% Chebyshev(Mean, Sd) UCL	2.213

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.75	Mean	2.101
Maximum	2.62	Median	2.063
SD	0.284	Std. Error of Mean	0.116
Coefficient of Variation	0.135	Skewness	1.262
Mean of logged Data	0.735	SD of logged Data	0.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.334	95% Adjusted-CLT UCL (Chen-1995)	2.355
		95% Modified-t UCL (Johnson-1978)	2.344

Nonparametric Distribution Free UCLs

95% CLT UCL	2.291	95% Jackknife UCL	2.334
95% Standard Bootstrap UCL	2.274	95% Bootstrap-t UCL	2.534
95% Hall's Bootstrap UCL	3.51	95% Percentile Bootstrap UCL	2.264
95% BCA Bootstrap UCL	2.334		
90% Chebyshev(Mean, Sd) UCL	2.448	95% Chebyshev(Mean, Sd) UCL	2.606
97.5% Chebyshev(Mean, Sd) UCL	2.824	99% Chebyshev(Mean, Sd) UCL	3.253

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.05	Mean	2.354
Maximum	3.36	Median	2.155
SD	0.504	Std. Error of Mean	0.206
Coefficient of Variation	0.214	Skewness	2.218
Mean of logged Data	0.84	SD of logged Data	0.189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.769	95% Adjusted-CLT UCL (Chen-1995)	2.892
		95% Modified-t UCL (Johnson-1978)	2.8

Nonparametric Distribution Free UCLs

95% CLT UCL	2.693	95% Jackknife UCL	2.769
95% Standard Bootstrap UCL	2.667	95% Bootstrap-t UCL	3.908
95% Hall's Bootstrap UCL	4.221	95% Percentile Bootstrap UCL	2.744
95% BCA Bootstrap UCL	2.787		
90% Chebyshev(Mean, Sd) UCL	2.972	95% Chebyshev(Mean, Sd) UCL	3.251
97.5% Chebyshev(Mean, Sd) UCL	3.639	99% Chebyshev(Mean, Sd) UCL	4.402

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.155	Mean	3.926
Maximum	5.84	Median	3.543
SD	1.042	Std. Error of Mean	0.425
Coefficient of Variation	0.265	Skewness	1.552
Mean of logged Data	1.342	SD of logged Data	0.241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.783	95% Adjusted-CLT UCL (Chen-1995)	4.913
		95% Modified-t UCL (Johnson-1978)	4.828

Nonparametric Distribution Free UCLs

95% CLT UCL	4.625	95% Jackknife UCL	4.783
95% Standard Bootstrap UCL	4.553	95% Bootstrap-t UCL	6.25
95% Hall's Bootstrap UCL	7.418	95% Percentile Bootstrap UCL	4.617
95% BCA Bootstrap UCL	4.743		
90% Chebyshev(Mean, Sd) UCL	5.202	95% Chebyshev(Mean, Sd) UCL	5.78
97.5% Chebyshev(Mean, Sd) UCL	6.582	99% Chebyshev(Mean, Sd) UCL	8.157

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.13	Mean	2.828
Maximum	3.215	Median	3.128
SD	0.526	Std. Error of Mean	0.215
Coefficient of Variation	0.186	Skewness	-0.947
Mean of logged Data	1.023	SD of logged Data	0.2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.261	95% Adjusted-CLT UCL (Chen-1995)	3.092
		95% Modified-t UCL (Johnson-1978)	3.247

Nonparametric Distribution Free UCLs

95% CLT UCL	3.181	95% Jackknife UCL	3.261
95% Standard Bootstrap UCL	3.145	95% Bootstrap-t UCL	3.176
95% Hall's Bootstrap UCL	3.039	95% Percentile Bootstrap UCL	3.163
95% BCA Bootstrap UCL	3.128		
90% Chebyshev(Mean, Sd) UCL	3.472	95% Chebyshev(Mean, Sd) UCL	3.764
97.5% Chebyshev(Mean, Sd) UCL	4.17	99% Chebyshev(Mean, Sd) UCL	4.966

Suggested UCL to Use

95% Student's-t UCL	3.261	or 95% Modified-t UCL	3.247

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.04	Mean	2.077
Maximum	2.11	Median	2.083
SD	0.0271	Std. Error of Mean	0.0111
Coefficient of Variation	0.0131	Skewness	-0.341
Mean of logged Data	0.731	SD of logged Data	0.0131

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.099	95% Adjusted-CLT UCL (Chen-1995)	2.093
		95% Modified-t UCL (Johnson-1978)	2.099

Nonparametric Distribution Free UCLs

95% CLT UCL	2.095	95% Jackknife UCL	2.099
95% Standard Bootstrap UCL	2.093	95% Bootstrap-t UCL	2.096
95% Hall's Bootstrap UCL	2.09	95% Percentile Bootstrap UCL	2.093
95% BCA Bootstrap UCL	2.091		
90% Chebyshev(Mean, Sd) UCL	2.11	95% Chebyshev(Mean, Sd) UCL	2.125
97.5% Chebyshev(Mean, Sd) UCL	2.146	99% Chebyshev(Mean, Sd) UCL	2.187

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.96	Mean	2.934
Maximum	4.58	Median	2.695
SD	1.066	Std. Error of Mean	0.435
Coefficient of Variation	0.363	Skewness	0.654
Mean of logged Data	1.023	SD of logged Data	0.356

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.811	95% Adjusted-CLT UCL (Chen-1995)	3.774
		95% Modified-t UCL (Johnson-1978)	3.831

Nonparametric Distribution Free UCLs

95% CLT UCL	3.65	95% Jackknife UCL	3.811
95% Standard Bootstrap UCL	3.579	95% Bootstrap-t UCL	4.033
95% Hall's Bootstrap UCL	3.507	95% Percentile Bootstrap UCL	3.603
95% BCA Bootstrap UCL	3.603		
90% Chebyshev(Mean, Sd) UCL	4.24	95% Chebyshev(Mean, Sd) UCL	4.832
97.5% Chebyshev(Mean, Sd) UCL	5.653	99% Chebyshev(Mean, Sd) UCL	7.266

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.14	Mean	3.201
Maximum	3.275	Median	3.205
SD	0.0492	Std. Error of Mean	0.0201
Coefficient of Variation	0.0154	Skewness	0.26
Mean of logged Data	1.163	SD of logged Data	0.0154

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.241	95% Adjusted-CLT UCL (Chen-1995)	3.236
		95% Modified-t UCL (Johnson-1978)	3.242

Nonparametric Distribution Free UCLs

95% CLT UCL	3.234	95% Jackknife UCL	3.241
95% Standard Bootstrap UCL	3.231	95% Bootstrap-t UCL	3.244
95% Hall's Bootstrap UCL	3.235	95% Percentile Bootstrap UCL	3.231
95% BCA Bootstrap UCL	3.232		
90% Chebyshev(Mean, Sd) UCL	3.261	95% Chebyshev(Mean, Sd) UCL	3.288
97.5% Chebyshev(Mean, Sd) UCL	3.326	99% Chebyshev(Mean, Sd) UCL	3.401

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.075	Mean	3.606
Maximum	5.54	Median	3.64
SD	1.387	Std. Error of Mean	0.566
Coefficient of Variation	0.385	Skewness	0.148
Mean of logged Data	1.216	SD of logged Data	0.409

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.747	95% Adjusted-CLT UCL (Chen-1995)	4.574
		95% Modified-t UCL (Johnson-1978)	4.753

Nonparametric Distribution Free UCLs

95% CLT UCL	4.537	95% Jackknife UCL	4.747
95% Standard Bootstrap UCL	4.436	95% Bootstrap-t UCL	4.929
95% Hall's Bootstrap UCL	4.648	95% Percentile Bootstrap UCL	4.453
95% BCA Bootstrap UCL	4.52		
90% Chebyshev(Mean, Sd) UCL	5.305	95% Chebyshev(Mean, Sd) UCL	6.074
97.5% Chebyshev(Mean, Sd) UCL	7.142	99% Chebyshev(Mean, Sd) UCL	9.24

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.255	Mean	1.279
Maximum	1.31	Median	1.28
SD	0.0204	Std. Error of Mean	0.00831
Coefficient of Variation	0.0159	Skewness	0.34
Mean of logged Data	0.246	SD of logged Data	0.0159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.296	95% Adjusted-CLT UCL (Chen-1995)	1.294
		95% Modified-t UCL (Johnson-1978)	1.296

Nonparametric Distribution Free UCLs

95% CLT UCL	1.293	95% Jackknife UCL	1.296
95% Standard Bootstrap UCL	1.292	95% Bootstrap-t UCL	1.295
95% Hall's Bootstrap UCL	1.294	95% Percentile Bootstrap UCL	1.292
95% BCA Bootstrap UCL	1.293		
90% Chebyshev(Mean, Sd) UCL	1.304	95% Chebyshev(Mean, Sd) UCL	1.315
97.5% Chebyshev(Mean, Sd) UCL	1.331	99% Chebyshev(Mean, Sd) UCL	1.362

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.24	Mean	3.009
Maximum	3.215	Median	3.148
SD	0.379	Std. Error of Mean	0.155
Coefficient of Variation	0.126	Skewness	-2.395
Mean of logged Data	1.094	SD of logged Data	0.141

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.321	95% Adjusted-CLT UCL (Chen-1995)	3.102
		95% Modified-t UCL (Johnson-1978)	3.296

Nonparametric Distribution Free UCLs

95% CLT UCL	3.263	95% Jackknife UCL	3.321
95% Standard Bootstrap UCL	3.24	95% Bootstrap-t UCL	3.229
95% Hall's Bootstrap UCL	3.152	95% Percentile Bootstrap UCL	3.18
95% BCA Bootstrap UCL	3.168		
90% Chebyshev(Mean, Sd) UCL	3.473	95% Chebyshev(Mean, Sd) UCL	3.683
97.5% Chebyshev(Mean, Sd) UCL	3.975	99% Chebyshev(Mean, Sd) UCL	4.547

Suggested UCL to Use

95% Student's-t UCL	3.321	or 95% Modified-t UCL	3.296

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.822	Mean	1.38
Maximum	1.89	Median	1.54
SD	0.425	Std. Error of Mean	0.174
Coefficient of Variation	0.308	Skewness	-0.525
Mean of logged Data	0.276	SD of logged Data	0.342

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.729	95% Adjusted-CLT UCL (Chen-1995)	1.626
		95% Modified-t UCL (Johnson-1978)	1.723

Nonparametric Distribution Free UCLs

95% CLT UCL	1.665	95% Jackknife UCL	1.729
95% Standard Bootstrap UCL	1.646	95% Bootstrap-t UCL	1.615
95% Hall's Bootstrap UCL	1.588	95% Percentile Bootstrap UCL	1.623
95% BCA Bootstrap UCL	1.623		
90% Chebyshev(Mean, Sd) UCL	1.9	95% Chebyshev(Mean, Sd) UCL	2.136
97.5% Chebyshev(Mean, Sd) UCL	2.463	99% Chebyshev(Mean, Sd) UCL	3.106

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.48	Mean	2.958
Maximum	3.225	Median	3.168
SD	0.367	Std. Error of Mean	0.15
Coefficient of Variation	0.124	Skewness	-0.941
Mean of logged Data	1.078	SD of logged Data	0.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.26	95% Adjusted-CLT UCL (Chen-1995)	3.143
		95% Modified-t UCL (Johnson-1978)	3.25

Nonparametric Distribution Free UCLs

95% CLT UCL	3.204	95% Jackknife UCL	3.26
95% Standard Bootstrap UCL	3.186	95% Bootstrap-t UCL	3.203
95% Hall's Bootstrap UCL	3.104	95% Percentile Bootstrap UCL	3.192
95% BCA Bootstrap UCL	3.176		
90% Chebyshev(Mean, Sd) UCL	3.407	95% Chebyshev(Mean, Sd) UCL	3.611
97.5% Chebyshev(Mean, Sd) UCL	3.894	99% Chebyshev(Mean, Sd) UCL	4.449

Suggested UCL to Use

95% Student's-t UCL	3.26	or 95% Modified-t UCL	3.25

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.67	Mean	3.65
Maximum	5.23	Median	3.368
SD	0.9	Std. Error of Mean	0.367
Coefficient of Variation	0.246	Skewness	1.194
Mean of logged Data	1.271	SD of logged Data	0.233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.39	95% Adjusted-CLT UCL (Chen-1995)	4.445
		95% Modified-t UCL (Johnson-1978)	4.42

Nonparametric Distribution Free UCLs

95% CLT UCL	4.254	95% Jackknife UCL	4.39
95% Standard Bootstrap UCL	4.185	95% Bootstrap-t UCL	5.199
95% Hall's Bootstrap UCL	8.354	95% Percentile Bootstrap UCL	4.219
95% BCA Bootstrap UCL	4.325		
90% Chebyshev(Mean, Sd) UCL	4.752	95% Chebyshev(Mean, Sd) UCL	5.251
97.5% Chebyshev(Mean, Sd) UCL	5.944	99% Chebyshev(Mean, Sd) UCL	7.304

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:46:26 AM
From File	40005E.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	12.17
Maximum	13.8	Median	12
SD	1.264	Std. Error of Mean	0.516
Coefficient of Variation	0.104	Skewness	0.23
Mean of logged Data	2.494	SD of logged Data	0.104

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.21	95% Adjusted-CLT UCL (Chen-1995)	13.07
		95% Modified-t UCL (Johnson-1978)	13.21

Nonparametric Distribution Free UCLs

95% CLT UCL	13.02	95% Jackknife UCL	13.21
95% Standard Bootstrap UCL	12.95	95% Bootstrap-t UCL	13.61
95% Hall's Bootstrap UCL	12.79	95% Percentile Bootstrap UCL	12.93
95% BCA Bootstrap UCL	12.98		
90% Chebyshev(Mean, Sd) UCL	13.72	95% Chebyshev(Mean, Sd) UCL	14.42
97.5% Chebyshev(Mean, Sd) UCL	15.39	99% Chebyshev(Mean, Sd) UCL	17.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.2	Mean	10.72
Maximum	11.2	Median	10.7
SD	0.36	Std. Error of Mean	0.147
Coefficient of Variation	0.0336	Skewness	-0.0864
Mean of logged Data	2.371	SD of logged Data	0.0337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.01	95% Adjusted-CLT UCL (Chen-1995)	10.95
		95% Modified-t UCL (Johnson-1978)	11.01

Nonparametric Distribution Free UCLs

95% CLT UCL	10.96	95% Jackknife UCL	11.01
95% Standard Bootstrap UCL	10.94	95% Bootstrap-t UCL	11.02
95% Hall's Bootstrap UCL	11.01	95% Percentile Bootstrap UCL	10.93
95% BCA Bootstrap UCL	10.93		
90% Chebyshev(Mean, Sd) UCL	11.16	95% Chebyshev(Mean, Sd) UCL	11.36
97.5% Chebyshev(Mean, Sd) UCL	11.63	99% Chebyshev(Mean, Sd) UCL	12.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.5	Mean	44.17
Maximum	46.9	Median	44.15
SD	2.332	Std. Error of Mean	0.952
Coefficient of Variation	0.0528	Skewness	0.0196
Mean of logged Data	3.787	SD of logged Data	0.0529

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.09	95% Adjusted-CLT UCL (Chen-1995)	45.74
		95% Modified-t UCL (Johnson-1978)	46.09

Nonparametric Distribution Free UCLs

95% CLT UCL	45.73	95% Jackknife UCL	46.09
95% Standard Bootstrap UCL	45.64	95% Bootstrap-t UCL	46.12
95% Hall's Bootstrap UCL	45.78	95% Percentile Bootstrap UCL	45.62
95% BCA Bootstrap UCL	45.58		
90% Chebyshev(Mean, Sd) UCL	47.02	95% Chebyshev(Mean, Sd) UCL	48.32
97.5% Chebyshev(Mean, Sd) UCL	50.11	99% Chebyshev(Mean, Sd) UCL	53.64

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.12	Mean	1.31
Maximum	1.59	Median	1.26
SD	0.177	Std. Error of Mean	0.0722
Coefficient of Variation	0.135	Skewness	0.835
Mean of logged Data	0.263	SD of logged Data	0.131

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.455	95% Adjusted-CLT UCL (Chen-1995)	1.455
		95% Modified-t UCL (Johnson-1978)	1.459

Nonparametric Distribution Free UCLs

95% CLT UCL	1.429	95% Jackknife UCL	1.455
95% Standard Bootstrap UCL	1.418	95% Bootstrap-t UCL	1.596
95% Hall's Bootstrap UCL	2.455	95% Percentile Bootstrap UCL	1.432
95% BCA Bootstrap UCL	1.433		
90% Chebyshev(Mean, Sd) UCL	1.526	95% Chebyshev(Mean, Sd) UCL	1.625
97.5% Chebyshev(Mean, Sd) UCL	1.761	99% Chebyshev(Mean, Sd) UCL	2.028

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.391	Mean	0.49
Maximum	0.53	Median	0.513
SD	0.0514	Std. Error of Mean	0.021
Coefficient of Variation	0.105	Skewness	-1.908
Mean of logged Data	-0.719	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.532	95% Adjusted-CLT UCL (Chen-1995)	0.507
		95% Modified-t UCL (Johnson-1978)	0.529

Nonparametric Distribution Free UCLs

95% CLT UCL	0.524	95% Jackknife UCL	0.532
95% Standard Bootstrap UCL	0.521	95% Bootstrap-t UCL	0.518
95% Hall's Bootstrap UCL	0.511	95% Percentile Bootstrap UCL	0.516
95% BCA Bootstrap UCL	0.512		
90% Chebyshev(Mean, Sd) UCL	0.553	95% Chebyshev(Mean, Sd) UCL	0.581
97.5% Chebyshev(Mean, Sd) UCL	0.621	99% Chebyshev(Mean, Sd) UCL	0.699

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.94	Mean	2.082
Maximum	2.145	Median	2.098
SD	0.076	Std. Error of Mean	0.031
Coefficient of Variation	0.0365	Skewness	-1.593
Mean of logged Data	0.733	SD of logged Data	0.0373

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.144	95% Adjusted-CLT UCL (Chen-1995)	2.111
		95% Modified-t UCL (Johnson-1978)	2.141

Nonparametric Distribution Free UCLs

95% CLT UCL	2.133	95% Jackknife UCL	2.144
95% Standard Bootstrap UCL	2.127	95% Bootstrap-t UCL	2.126
95% Hall's Bootstrap UCL	2.116	95% Percentile Bootstrap UCL	2.124
95% BCA Bootstrap UCL	2.115		
90% Chebyshev(Mean, Sd) UCL	2.175	95% Chebyshev(Mean, Sd) UCL	2.217
97.5% Chebyshev(Mean, Sd) UCL	2.275	99% Chebyshev(Mean, Sd) UCL	2.39

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.94	Mean	2.413
Maximum	3.81	Median	2.12
SD	0.703	Std. Error of Mean	0.287
Coefficient of Variation	0.291	Skewness	2.187
Mean of logged Data	0.852	SD of logged Data	0.249

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.991	95% Adjusted-CLT UCL (Chen-1995)	3.158
		95% Modified-t UCL (Johnson-1978)	3.033

Nonparametric Distribution Free UCLs

95% CLT UCL	2.884	95% Jackknife UCL	2.991
95% Standard Bootstrap UCL	2.837	95% Bootstrap-t UCL	5.452
95% Hall's Bootstrap UCL	5.997	95% Percentile Bootstrap UCL	2.93
95% BCA Bootstrap UCL	3.056		
90% Chebyshev(Mean, Sd) UCL	3.273	95% Chebyshev(Mean, Sd) UCL	3.663
97.5% Chebyshev(Mean, Sd) UCL	4.204	99% Chebyshev(Mean, Sd) UCL	5.267

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.065	Mean	2.971
Maximum	5.44	Median	2.123
SD	1.424	Std. Error of Mean	0.581
Coefficient of Variation	0.479	Skewness	1.396
Mean of logged Data	1.007	SD of logged Data	0.422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.143	95% Adjusted-CLT UCL (Chen-1995)	4.281
		95% Modified-t UCL (Johnson-1978)	4.198

Nonparametric Distribution Free UCLs

95% CLT UCL	3.927	95% Jackknife UCL	4.143
95% Standard Bootstrap UCL	3.841	95% Bootstrap-t UCL	45.26
95% Hall's Bootstrap UCL	28.85	95% Percentile Bootstrap UCL	3.848
95% BCA Bootstrap UCL	4.083		
90% Chebyshev(Mean, Sd) UCL	4.715	95% Chebyshev(Mean, Sd) UCL	5.505
97.5% Chebyshev(Mean, Sd) UCL	6.602	99% Chebyshev(Mean, Sd) UCL	8.756

Suggested UCL to Use

95% Student's-t UCL	4.143	or 95% Modified-t UCL	4.198

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.18	Mean	4.582
Maximum	7.65	Median	4.048
SD	1.759	Std. Error of Mean	0.718
Coefficient of Variation	0.384	Skewness	1.213
Mean of logged Data	1.467	SD of logged Data	0.356

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.029	95% Adjusted-CLT UCL (Chen-1995)	6.143
		95% Modified-t UCL (Johnson-1978)	6.088

Nonparametric Distribution Free UCLs

95% CLT UCL	5.763	95% Jackknife UCL	6.029
95% Standard Bootstrap UCL	5.669	95% Bootstrap-t UCL	7.581
95% Hall's Bootstrap UCL	6.588	95% Percentile Bootstrap UCL	5.725
95% BCA Bootstrap UCL	6.051		
90% Chebyshev(Mean, Sd) UCL	6.736	95% Chebyshev(Mean, Sd) UCL	7.712
97.5% Chebyshev(Mean, Sd) UCL	9.066	99% Chebyshev(Mean, Sd) UCL	11.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.51	Mean	3.103
Maximum	3.85	Median	3.203
SD	0.505	Std. Error of Mean	0.206
Coefficient of Variation	0.163	Skewness	0.113
Mean of logged Data	1.121	SD of logged Data	0.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.519	95% Adjusted-CLT UCL (Chen-1995)	3.453
		95% Modified-t UCL (Johnson-1978)	3.521

Nonparametric Distribution Free UCLs

95% CLT UCL	3.443	95% Jackknife UCL	3.519
95% Standard Bootstrap UCL	3.41	95% Bootstrap-t UCL	3.539
95% Hall's Bootstrap UCL	3.43	95% Percentile Bootstrap UCL	3.426
95% BCA Bootstrap UCL	3.431		
90% Chebyshev(Mean, Sd) UCL	3.722	95% Chebyshev(Mean, Sd) UCL	4.003
97.5% Chebyshev(Mean, Sd) UCL	4.392	99% Chebyshev(Mean, Sd) UCL	5.156

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.065	Mean	2.244
Maximum	2.96	Median	2.1
SD	0.352	Std. Error of Mean	0.144
Coefficient of Variation	0.157	Skewness	2.421
Mean of logged Data	0.799	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.533	95% Adjusted-CLT UCL (Chen-1995)	2.632
		95% Modified-t UCL (Johnson-1978)	2.557

Nonparametric Distribution Free UCLs

95% CLT UCL	2.48	95% Jackknife UCL	2.533
95% Standard Bootstrap UCL	2.46	95% Bootstrap-t UCL	5.669
95% Hall's Bootstrap UCL	4.909	95% Percentile Bootstrap UCL	2.524
95% BCA Bootstrap UCL	2.545		
90% Chebyshev(Mean, Sd) UCL	2.675	95% Chebyshev(Mean, Sd) UCL	2.87
97.5% Chebyshev(Mean, Sd) UCL	3.141	99% Chebyshev(Mean, Sd) UCL	3.672

Suggested UCL to Use

95% Student's-t UCL	2.533	or 95% Modified-t UCL	2.557

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.065	Mean	3.198
Maximum	5.52	Median	2.758
SD	1.39	Std. Error of Mean	0.567
Coefficient of Variation	0.435	Skewness	1.014
Mean of logged Data	1.089	SD of logged Data	0.412

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.341	95% Adjusted-CLT UCL (Chen-1995)	4.382
		95% Modified-t UCL (Johnson-1978)	4.38

Nonparametric Distribution Free UCLs

95% CLT UCL	4.131	95% Jackknife UCL	4.341
95% Standard Bootstrap UCL	4.05	95% Bootstrap-t UCL	4.634
95% Hall's Bootstrap UCL	4.566	95% Percentile Bootstrap UCL	4.038
95% BCA Bootstrap UCL	4.127		
90% Chebyshev(Mean, Sd) UCL	4.9	95% Chebyshev(Mean, Sd) UCL	5.671
97.5% Chebyshev(Mean, Sd) UCL	6.741	99% Chebyshev(Mean, Sd) UCL	8.843

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.985	Mean	3.204
Maximum	3.305	Median	3.228
SD	0.118	Std. Error of Mean	0.048
Coefficient of Variation	0.0367	Skewness	-1.591
Mean of logged Data	1.164	SD of logged Data	0.0374

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.301	95% Adjusted-CLT UCL (Chen-1995)	3.25
		95% Modified-t UCL (Johnson-1978)	3.296

Nonparametric Distribution Free UCLs

95% CLT UCL	3.283	95% Jackknife UCL	3.301
95% Standard Bootstrap UCL	3.276	95% Bootstrap-t UCL	3.271
95% Hall's Bootstrap UCL	3.257	95% Percentile Bootstrap UCL	3.269
95% BCA Bootstrap UCL	3.259		
90% Chebyshev(Mean, Sd) UCL	3.348	95% Chebyshev(Mean, Sd) UCL	3.413
97.5% Chebyshev(Mean, Sd) UCL	3.504	99% Chebyshev(Mean, Sd) UCL	3.682

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.065	Mean	4.323
Maximum	9.08	Median	3.348
SD	2.839	Std. Error of Mean	1.159
Coefficient of Variation	0.657	Skewness	1.043
Mean of logged Data	1.29	SD of logged Data	0.639

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.658	95% Adjusted-CLT UCL (Chen-1995)	6.756
		95% Modified-t UCL (Johnson-1978)	6.74

Nonparametric Distribution Free UCLs

95% CLT UCL	6.229	95% Jackknife UCL	6.658
95% Standard Bootstrap UCL	6.035	95% Bootstrap-t UCL	7.478
95% Hall's Bootstrap UCL	7.672	95% Percentile Bootstrap UCL	6.233
95% BCA Bootstrap UCL	6.384		
90% Chebyshev(Mean, Sd) UCL	7.8	95% Chebyshev(Mean, Sd) UCL	9.375
97.5% Chebyshev(Mean, Sd) UCL	11.56	99% Chebyshev(Mean, Sd) UCL	15.85

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.195	Mean	1.282
Maximum	1.32	Median	1.293
SD	0.0465	Std. Error of Mean	0.019
Coefficient of Variation	0.0363	Skewness	-1.597
Mean of logged Data	0.248	SD of logged Data	0.0371

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.32	95% Adjusted-CLT UCL (Chen-1995)	1.3
		95% Modified-t UCL (Johnson-1978)	1.318

Nonparametric Distribution Free UCLs

95% CLT UCL	1.313	95% Jackknife UCL	1.32
95% Standard Bootstrap UCL	1.309	95% Bootstrap-t UCL	1.308
95% Hall's Bootstrap UCL	1.302	95% Percentile Bootstrap UCL	1.307
95% BCA Bootstrap UCL	1.303		
90% Chebyshev(Mean, Sd) UCL	1.339	95% Chebyshev(Mean, Sd) UCL	1.364
97.5% Chebyshev(Mean, Sd) UCL	1.4	99% Chebyshev(Mean, Sd) UCL	1.471

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.59	Mean	3.287
Maximum	4.46	Median	3.203
SD	0.63	Std. Error of Mean	0.257
Coefficient of Variation	0.192	Skewness	1.489
Mean of logged Data	1.176	SD of logged Data	0.18

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.805	95% Adjusted-CLT UCL (Chen-1995)	3.877
		95% Modified-t UCL (Johnson-1978)	3.831

Nonparametric Distribution Free UCLs

95% CLT UCL	3.71	95% Jackknife UCL	3.805
95% Standard Bootstrap UCL	3.675	95% Bootstrap-t UCL	4.096
95% Hall's Bootstrap UCL	5.952	95% Percentile Bootstrap UCL	3.71
95% BCA Bootstrap UCL	3.825		
90% Chebyshev(Mean, Sd) UCL	4.058	95% Chebyshev(Mean, Sd) UCL	4.408
97.5% Chebyshev(Mean, Sd) UCL	4.893	99% Chebyshev(Mean, Sd) UCL	5.846

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.99	Mean	2.27
Maximum	2.72	Median	2.245
SD	0.267	Std. Error of Mean	0.109
Coefficient of Variation	0.118	Skewness	0.929
Mean of logged Data	0.814	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.49	95% Adjusted-CLT UCL (Chen-1995)	2.493
		95% Modified-t UCL (Johnson-1978)	2.497

Nonparametric Distribution Free UCLs

95% CLT UCL	2.449	95% Jackknife UCL	2.49
95% Standard Bootstrap UCL	2.436	95% Bootstrap-t UCL	2.572
95% Hall's Bootstrap UCL	2.499	95% Percentile Bootstrap UCL	2.442
95% BCA Bootstrap UCL	2.475		
90% Chebyshev(Mean, Sd) UCL	2.597	95% Chebyshev(Mean, Sd) UCL	2.745
97.5% Chebyshev(Mean, Sd) UCL	2.951	99% Chebyshev(Mean, Sd) UCL	3.354

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.43	Mean	3.175
Maximum	4.37	Median	3.203
SD	0.694	Std. Error of Mean	0.283
Coefficient of Variation	0.218	Skewness	0.934
Mean of logged Data	1.136	SD of logged Data	0.211

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.746	95% Adjusted-CLT UCL (Chen-1995)	3.756
		95% Modified-t UCL (Johnson-1978)	3.764

Nonparametric Distribution Free UCLs

95% CLT UCL	3.641	95% Jackknife UCL	3.746
95% Standard Bootstrap UCL	3.594	95% Bootstrap-t UCL	3.853
95% Hall's Bootstrap UCL	4.004	95% Percentile Bootstrap UCL	3.62
95% BCA Bootstrap UCL	3.671		
90% Chebyshev(Mean, Sd) UCL	4.025	95% Chebyshev(Mean, Sd) UCL	4.409
97.5% Chebyshev(Mean, Sd) UCL	4.943	99% Chebyshev(Mean, Sd) UCL	5.993

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.18	Mean	4.508
Maximum	7.76	Median	3.753
SD	1.805	Std. Error of Mean	0.737
Coefficient of Variation	0.4	Skewness	1.47
Mean of logged Data	1.448	SD of logged Data	0.358

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.993	95% Adjusted-CLT UCL (Chen-1995)	6.193
		95% Modified-t UCL (Johnson-1978)	6.067

Nonparametric Distribution Free UCLs

95% CLT UCL	5.72	95% Jackknife UCL	5.993
95% Standard Bootstrap UCL	5.593	95% Bootstrap-t UCL	7.961
95% Hall's Bootstrap UCL	11.46	95% Percentile Bootstrap UCL	5.631
95% BCA Bootstrap UCL	6.007		
90% Chebyshev(Mean, Sd) UCL	6.719	95% Chebyshev(Mean, Sd) UCL	7.72
97.5% Chebyshev(Mean, Sd) UCL	9.11	99% Chebyshev(Mean, Sd) UCL	11.84

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:47:31 AM
From File	40005F.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.1	Mean	11.68
Maximum	13.8	Median	11.5
SD	1.7	Std. Error of Mean	0.694
Coefficient of Variation	0.145	Skewness	0.17
Mean of logged Data	2.449	SD of logged Data	0.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.08	95% Adjusted-CLT UCL (Chen-1995)	12.88
		95% Modified-t UCL (Johnson-1978)	13.09

Nonparametric Distribution Free UCLs

95% CLT UCL	12.82	95% Jackknife UCL	13.08
95% Standard Bootstrap UCL	12.71	95% Bootstrap-t UCL	13.44
95% Hall's Bootstrap UCL	12.31	95% Percentile Bootstrap UCL	12.77
95% BCA Bootstrap UCL	12.75		
90% Chebyshev(Mean, Sd) UCL	13.77	95% Chebyshev(Mean, Sd) UCL	14.71
97.5% Chebyshev(Mean, Sd) UCL	16.02	99% Chebyshev(Mean, Sd) UCL	18.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	10.5	Mean	10.78
Maximum	11.4	Median	10.65
SD	0.366	Std. Error of Mean	0.149
Coefficient of Variation	0.0339	Skewness	1.083
Mean of logged Data	2.378	SD of logged Data	0.0335

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.08	95% Adjusted-CLT UCL (Chen-1995)	11.1
		95% Modified-t UCL (Johnson-1978)	11.1

Nonparametric Distribution Free UCLs

95% CLT UCL	11.03	95% Jackknife UCL	11.08
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	11.23	95% Chebyshev(Mean, Sd) UCL	11.43
97.5% Chebyshev(Mean, Sd) UCL	11.72	99% Chebyshev(Mean, Sd) UCL	12.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.2	Mean	43
Maximum	47.3	Median	42.75
SD	3.207	Std. Error of Mean	1.309
Coefficient of Variation	0.0746	Skewness	0.177
Mean of logged Data	3.759	SD of logged Data	0.0744

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.64	95% Adjusted-CLT UCL (Chen-1995)	45.25
		95% Modified-t UCL (Johnson-1978)	45.65

Nonparametric Distribution Free UCLs

95% CLT UCL	45.15	95% Jackknife UCL	45.64
95% Standard Bootstrap UCL	44.97	95% Bootstrap-t UCL	45.83
95% Hall's Bootstrap UCL	44.65	95% Percentile Bootstrap UCL	44.87
95% BCA Bootstrap UCL	44.97		
90% Chebyshev(Mean, Sd) UCL	46.93	95% Chebyshev(Mean, Sd) UCL	48.71
97.5% Chebyshev(Mean, Sd) UCL	51.18	99% Chebyshev(Mean, Sd) UCL	56.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.746	Mean	0.973
Maximum	1.24	Median	0.945
SD	0.192	Std. Error of Mean	0.0782
Coefficient of Variation	0.197	Skewness	0.367
Mean of logged Data	-0.0438	SD of logged Data	0.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.13	95% Adjusted-CLT UCL (Chen-1995)	1.114
		95% Modified-t UCL (Johnson-1978)	1.132

Nonparametric Distribution Free UCLs

95% CLT UCL	1.101	95% Jackknife UCL	1.13
95% Standard Bootstrap UCL	1.089	95% Bootstrap-t UCL	1.198
95% Hall's Bootstrap UCL	1.205	95% Percentile Bootstrap UCL	1.097
95% BCA Bootstrap UCL	1.09		
90% Chebyshev(Mean, Sd) UCL	1.207	95% Chebyshev(Mean, Sd) UCL	1.314
97.5% Chebyshev(Mean, Sd) UCL	1.461	99% Chebyshev(Mean, Sd) UCL	1.751

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.488	Mean	0.519
Maximum	0.535	Median	0.525
SD	0.0166	Std. Error of Mean	0.00676
Coefficient of Variation	0.0319	Skewness	-1.686
Mean of logged Data	-0.657	SD of logged Data	0.0325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.532	95% Adjusted-CLT UCL (Chen-1995)	0.525
		95% Modified-t UCL (Johnson-1978)	0.532

Nonparametric Distribution Free UCLs

95% CLT UCL	0.53	95% Jackknife UCL	0.532
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.539	95% Chebyshev(Mean, Sd) UCL	0.548
97.5% Chebyshev(Mean, Sd) UCL	0.561	99% Chebyshev(Mean, Sd) UCL	0.586

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.98	Mean	2.103
Maximum	2.165	Median	2.125
SD	0.0652	Std. Error of Mean	0.0266
Coefficient of Variation	0.031	Skewness	-1.666
Mean of logged Data	0.743	SD of logged Data	0.0316

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.156	95% Adjusted-CLT UCL (Chen-1995)	2.127
		95% Modified-t UCL (Johnson-1978)	2.153

Nonparametric Distribution Free UCLs

95% CLT UCL	2.146	95% Jackknife UCL	2.156
95% Standard Bootstrap UCL	2.143	95% Bootstrap-t UCL	2.141
95% Hall's Bootstrap UCL	2.131	95% Percentile Bootstrap UCL	2.138
95% BCA Bootstrap UCL	2.132		
90% Chebyshev(Mean, Sd) UCL	2.182	95% Chebyshev(Mean, Sd) UCL	2.219
97.5% Chebyshev(Mean, Sd) UCL	2.269	99% Chebyshev(Mean, Sd) UCL	2.368

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.125	Mean	2.508
Maximum	4.05	Median	2.158
SD	0.764	Std. Error of Mean	0.312
Coefficient of Variation	0.305	Skewness	2.34
Mean of logged Data	0.889	SD of logged Data	0.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.136	95% Adjusted-CLT UCL (Chen-1995)	3.339
		95% Modified-t UCL (Johnson-1978)	3.186

Nonparametric Distribution Free UCLs

95% CLT UCL	3.02	95% Jackknife UCL	3.136
95% Standard Bootstrap UCL	2.968	95% Bootstrap-t UCL	20.51
95% Hall's Bootstrap UCL	8.922	95% Percentile Bootstrap UCL	3.096
95% BCA Bootstrap UCL	3.19		
90% Chebyshev(Mean, Sd) UCL	3.443	95% Chebyshev(Mean, Sd) UCL	3.867
97.5% Chebyshev(Mean, Sd) UCL	4.455	99% Chebyshev(Mean, Sd) UCL	5.61

Suggested UCL to Use

95% Student's-t UCL	3.136	or 95% Modified-t UCL	3.186

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.125	Mean	3.279
Maximum	5.78	Median	2.913
SD	1.454	Std. Error of Mean	0.593
Coefficient of Variation	0.443	Skewness	1.116
Mean of logged Data	1.112	SD of logged Data	0.416

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.475	95% Adjusted-CLT UCL (Chen-1995)	4.544
		95% Modified-t UCL (Johnson-1978)	4.52

Nonparametric Distribution Free UCLs

95% CLT UCL	4.255	95% Jackknife UCL	4.475
95% Standard Bootstrap UCL	4.178	95% Bootstrap-t UCL	5.12
95% Hall's Bootstrap UCL	4.421	95% Percentile Bootstrap UCL	4.215
95% BCA Bootstrap UCL	4.442		
90% Chebyshev(Mean, Sd) UCL	5.059	95% Chebyshev(Mean, Sd) UCL	5.866
97.5% Chebyshev(Mean, Sd) UCL	6.985	99% Chebyshev(Mean, Sd) UCL	9.183

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.265	Mean	4.89
Maximum	8.53	Median	4.31
SD	2.08	Std. Error of Mean	0.849
Coefficient of Variation	0.425	Skewness	1.217
Mean of logged Data	1.519	SD of logged Data	0.394

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.601	95% Adjusted-CLT UCL (Chen-1995)	6.737
		95% Modified-t UCL (Johnson-1978)	6.671

Nonparametric Distribution Free UCLs

95% CLT UCL	6.286	95% Jackknife UCL	6.601
95% Standard Bootstrap UCL	6.15	95% Bootstrap-t UCL	7.521
95% Hall's Bootstrap UCL	6.699	95% Percentile Bootstrap UCL	6.16
95% BCA Bootstrap UCL	6.428		
90% Chebyshev(Mean, Sd) UCL	7.437	95% Chebyshev(Mean, Sd) UCL	8.591
97.5% Chebyshev(Mean, Sd) UCL	10.19	99% Chebyshev(Mean, Sd) UCL	13.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.55	Mean	3.15
Maximum	3.91	Median	3.275
SD	0.52	Std. Error of Mean	0.212
Coefficient of Variation	0.165	Skewness	0.0586
Mean of logged Data	1.136	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.577	95% Adjusted-CLT UCL (Chen-1995)	3.504
		95% Modified-t UCL (Johnson-1978)	3.578

Nonparametric Distribution Free UCLs

95% CLT UCL	3.499	95% Jackknife UCL	3.577
95% Standard Bootstrap UCL	3.465	95% Bootstrap-t UCL	3.619
95% Hall's Bootstrap UCL	3.47	95% Percentile Bootstrap UCL	3.484
95% BCA Bootstrap UCL	3.473		
90% Chebyshev(Mean, Sd) UCL	3.786	95% Chebyshev(Mean, Sd) UCL	4.075
97.5% Chebyshev(Mean, Sd) UCL	4.475	99% Chebyshev(Mean, Sd) UCL	5.26

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	2.295
Maximum	3.18	Median	2.13
SD	0.435	Std. Error of Mean	0.177
Coefficient of Variation	0.189	Skewness	2.42
Mean of logged Data	0.818	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.653	95% Adjusted-CLT UCL (Chen-1995)	2.774
		95% Modified-t UCL (Johnson-1978)	2.682

Nonparametric Distribution Free UCLs

95% CLT UCL	2.587	95% Jackknife UCL	2.653
95% Standard Bootstrap UCL	2.56	95% Bootstrap-t UCL	5.719
95% Hall's Bootstrap UCL	5.059	95% Percentile Bootstrap UCL	2.645
95% BCA Bootstrap UCL	2.666		
90% Chebyshev(Mean, Sd) UCL	2.827	95% Chebyshev(Mean, Sd) UCL	3.069
97.5% Chebyshev(Mean, Sd) UCL	3.403	99% Chebyshev(Mean, Sd) UCL	4.061

Suggested UCL to Use

95% Student's-t UCL	2.653	or 95% Modified-t UCL	2.682

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.125	Mean	3.341
Maximum	5.85	Median	2.913
SD	1.504	Std. Error of Mean	0.614
Coefficient of Variation	0.45	Skewness	0.98
Mean of logged Data	1.127	SD of logged Data	0.429

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.578	95% Adjusted-CLT UCL (Chen-1995)	4.613
		95% Modified-t UCL (Johnson-1978)	4.619

Nonparametric Distribution Free UCLs

95% CLT UCL	4.351	95% Jackknife UCL	4.578
95% Standard Bootstrap UCL	4.265	95% Bootstrap-t UCL	4.973
95% Hall's Bootstrap UCL	4.331	95% Percentile Bootstrap UCL	4.286
95% BCA Bootstrap UCL	4.359		
90% Chebyshev(Mean, Sd) UCL	5.182	95% Chebyshev(Mean, Sd) UCL	6.017
97.5% Chebyshev(Mean, Sd) UCL	7.174	99% Chebyshev(Mean, Sd) UCL	9.449

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.045	Mean	3.233
Maximum	3.33	Median	3.265
SD	0.1	Std. Error of Mean	0.0409
Coefficient of Variation	0.031	Skewness	-1.628
Mean of logged Data	1.173	SD of logged Data	0.0316

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.315	95% Adjusted-CLT UCL (Chen-1995)	3.271
		95% Modified-t UCL (Johnson-1978)	3.31

Nonparametric Distribution Free UCLs

95% CLT UCL	3.3	95% Jackknife UCL	3.315
95% Standard Bootstrap UCL	3.294	95% Bootstrap-t UCL	3.287
95% Hall's Bootstrap UCL	3.276	95% Percentile Bootstrap UCL	3.287
95% BCA Bootstrap UCL	3.278		
90% Chebyshev(Mean, Sd) UCL	3.355	95% Chebyshev(Mean, Sd) UCL	3.411
97.5% Chebyshev(Mean, Sd) UCL	3.488	99% Chebyshev(Mean, Sd) UCL	3.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.125	Mean	4.723
Maximum	9.71	Median	4.05
SD	3.074	Std. Error of Mean	1.255
Coefficient of Variation	0.651	Skewness	0.834
Mean of logged Data	1.372	SD of logged Data	0.661

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.253	95% Adjusted-CLT UCL (Chen-1995)	7.245
		95% Modified-t UCL (Johnson-1978)	7.324

Nonparametric Distribution Free UCLs

95% CLT UCL	6.788	95% Jackknife UCL	7.253
95% Standard Bootstrap UCL	6.645	95% Bootstrap-t UCL	8.188
95% Hall's Bootstrap UCL	6.587	95% Percentile Bootstrap UCL	6.649
95% BCA Bootstrap UCL	6.61		
90% Chebyshev(Mean, Sd) UCL	8.489	95% Chebyshev(Mean, Sd) UCL	10.19
97.5% Chebyshev(Mean, Sd) UCL	12.56	99% Chebyshev(Mean, Sd) UCL	17.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.22	Mean	1.293
Maximum	1.33	Median	1.305
SD	0.0391	Std. Error of Mean	0.016
Coefficient of Variation	0.0302	Skewness	-1.583
Mean of logged Data	0.256	SD of logged Data	0.0307

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.325	95% Adjusted-CLT UCL (Chen-1995)	1.308
		95% Modified-t UCL (Johnson-1978)	1.323

Nonparametric Distribution Free UCLs

95% CLT UCL	1.319	95% Jackknife UCL	1.325
95% Standard Bootstrap UCL	1.316	95% Bootstrap-t UCL	1.317
95% Hall's Bootstrap UCL	1.31	95% Percentile Bootstrap UCL	1.314
95% BCA Bootstrap UCL	1.31		
90% Chebyshev(Mean, Sd) UCL	1.34	95% Chebyshev(Mean, Sd) UCL	1.362
97.5% Chebyshev(Mean, Sd) UCL	1.392	99% Chebyshev(Mean, Sd) UCL	1.451

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.92	Mean	3.423
Maximum	4.76	Median	3.275
SD	0.677	Std. Error of Mean	0.276
Coefficient of Variation	0.198	Skewness	2.097
Mean of logged Data	1.217	SD of logged Data	0.177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.98	95% Adjusted-CLT UCL (Chen-1995)	4.13
		95% Modified-t UCL (Johnson-1978)	4.019

Nonparametric Distribution Free UCLs

95% CLT UCL	3.878	95% Jackknife UCL	3.98
95% Standard Bootstrap UCL	3.83	95% Bootstrap-t UCL	4.803
95% Hall's Bootstrap UCL	6.099	95% Percentile Bootstrap UCL	3.898
95% BCA Bootstrap UCL	4.023		
90% Chebyshev(Mean, Sd) UCL	4.252	95% Chebyshev(Mean, Sd) UCL	4.627
97.5% Chebyshev(Mean, Sd) UCL	5.149	99% Chebyshev(Mean, Sd) UCL	6.172

Suggested UCL to Use

95% Student's-t UCL	3.98	or 95% Modified-t UCL	4.019

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.46	Mean	1.83
Maximum	2.37	Median	1.74
SD	0.35	Std. Error of Mean	0.143
Coefficient of Variation	0.191	Skewness	0.674
Mean of logged Data	0.59	SD of logged Data	0.187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.118	95% Adjusted-CLT UCL (Chen-1995)	2.107
		95% Modified-t UCL (Johnson-1978)	2.125

Nonparametric Distribution Free UCLs

95% CLT UCL	2.065	95% Jackknife UCL	2.118
95% Standard Bootstrap UCL	2.043	95% Bootstrap-t UCL	2.167
95% Hall's Bootstrap UCL	2.119	95% Percentile Bootstrap UCL	2.055
95% BCA Bootstrap UCL	2.063		
90% Chebyshev(Mean, Sd) UCL	2.259	95% Chebyshev(Mean, Sd) UCL	2.454
97.5% Chebyshev(Mean, Sd) UCL	2.723	99% Chebyshev(Mean, Sd) UCL	3.253

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.46	Mean	3.212
Maximum	4.4	Median	3.275
SD	0.702	Std. Error of Mean	0.287
Coefficient of Variation	0.219	Skewness	0.814
Mean of logged Data	1.148	SD of logged Data	0.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.789	95% Adjusted-CLT UCL (Chen-1995)	3.785
		95% Modified-t UCL (Johnson-1978)	3.805

Nonparametric Distribution Free UCLs

95% CLT UCL	3.683	95% Jackknife UCL	3.789
95% Standard Bootstrap UCL	3.652	95% Bootstrap-t UCL	3.955
95% Hall's Bootstrap UCL	3.92	95% Percentile Bootstrap UCL	3.676
95% BCA Bootstrap UCL	3.72		
90% Chebyshev(Mean, Sd) UCL	4.071	95% Chebyshev(Mean, Sd) UCL	4.461
97.5% Chebyshev(Mean, Sd) UCL	5.001	99% Chebyshev(Mean, Sd) UCL	6.063

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.265	Mean	4.91
Maximum	8.64	Median	4.245
SD	2.125	Std. Error of Mean	0.867
Coefficient of Variation	0.433	Skewness	1.247
Mean of logged Data	1.521	SD of logged Data	0.399

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.658	95% Adjusted-CLT UCL (Chen-1995)	6.809
		95% Modified-t UCL (Johnson-1978)	6.732

Nonparametric Distribution Free UCLs

95% CLT UCL	6.337	95% Jackknife UCL	6.658
95% Standard Bootstrap UCL	6.175	95% Bootstrap-t UCL	7.434
95% Hall's Bootstrap UCL	6.727	95% Percentile Bootstrap UCL	6.29
95% BCA Bootstrap UCL	6.527		
90% Chebyshev(Mean, Sd) UCL	7.512	95% Chebyshev(Mean, Sd) UCL	8.691
97.5% Chebyshev(Mean, Sd) UCL	10.33	99% Chebyshev(Mean, Sd) UCL	13.54

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:10:24 AM
From File	40005G.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.43	Mean	10.22
Maximum	12	Median	10.08
SD	1.52	Std. Error of Mean	0.62
Coefficient of Variation	0.149	Skewness	0.108
Mean of logged Data	2.315	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.47	95% Adjusted-CLT UCL (Chen-1995)	11.27
		95% Modified-t UCL (Johnson-1978)	11.48

Nonparametric Distribution Free UCLs

95% CLT UCL	11.24	95% Jackknife UCL	11.47
95% Standard Bootstrap UCL	11.18	95% Bootstrap-t UCL	11.44
95% Hall's Bootstrap UCL	11.08	95% Percentile Bootstrap UCL	11.19
95% BCA Bootstrap UCL	11.14		
90% Chebyshev(Mean, Sd) UCL	12.08	95% Chebyshev(Mean, Sd) UCL	12.93
97.5% Chebyshev(Mean, Sd) UCL	14.1	99% Chebyshev(Mean, Sd) UCL	16.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.59	Mean	10.49
Maximum	12.7	Median	10.15
SD	1.137	Std. Error of Mean	0.464
Coefficient of Variation	0.108	Skewness	1.949
Mean of logged Data	2.346	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.43	95% Adjusted-CLT UCL (Chen-1995)	11.65
		95% Modified-t UCL (Johnson-1978)	11.49

Nonparametric Distribution Free UCLs

95% CLT UCL	11.26	95% Jackknife UCL	11.43
95% Standard Bootstrap UCL	11.19	95% Bootstrap-t UCL	13.03
95% Hall's Bootstrap UCL	14.93	95% Percentile Bootstrap UCL	11.31
95% BCA Bootstrap UCL	11.48		
90% Chebyshev(Mean, Sd) UCL	11.89	95% Chebyshev(Mean, Sd) UCL	12.52
97.5% Chebyshev(Mean, Sd) UCL	13.39	99% Chebyshev(Mean, Sd) UCL	15.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	34	Mean	37.97
Maximum	41.9	Median	37.75
SD	3.257	Std. Error of Mean	1.33
Coefficient of Variation	0.0858	Skewness	0.0753
Mean of logged Data	3.634	SD of logged Data	0.0859

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.65	95% Adjusted-CLT UCL (Chen-1995)	40.2
		95% Modified-t UCL (Johnson-1978)	40.65

Nonparametric Distribution Free UCLs

95% CLT UCL	40.15	95% Jackknife UCL	40.65
95% Standard Bootstrap UCL	39.95	95% Bootstrap-t UCL	41.27
95% Hall's Bootstrap UCL	39.96	95% Percentile Bootstrap UCL	39.95
95% BCA Bootstrap UCL	39.85		
90% Chebyshev(Mean, Sd) UCL	41.96	95% Chebyshev(Mean, Sd) UCL	43.76
97.5% Chebyshev(Mean, Sd) UCL	46.27	99% Chebyshev(Mean, Sd) UCL	51.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.871	Mean	1.141
Maximum	1.9	Median	1.009
SD	0.387	Std. Error of Mean	0.158
Coefficient of Variation	0.339	Skewness	2.05
Mean of logged Data	0.0929	SD of logged Data	0.289

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.459	95% Adjusted-CLT UCL (Chen-1995)	1.542
		95% Modified-t UCL (Johnson-1978)	1.481

Nonparametric Distribution Free UCLs

95% CLT UCL	1.401	95% Jackknife UCL	1.459
95% Standard Bootstrap UCL	1.377	95% Bootstrap-t UCL	2.262
95% Hall's Bootstrap UCL	2.642	95% Percentile Bootstrap UCL	1.431
95% BCA Bootstrap UCL	1.481		
90% Chebyshev(Mean, Sd) UCL	1.615	95% Chebyshev(Mean, Sd) UCL	1.83
97.5% Chebyshev(Mean, Sd) UCL	2.128	99% Chebyshev(Mean, Sd) UCL	2.714

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.497	Mean	0.514
Maximum	0.53	Median	0.513
SD	0.0124	Std. Error of Mean	0.00504
Coefficient of Variation	0.0241	Skewness	0.0772
Mean of logged Data	-0.666	SD of logged Data	0.024

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.524	95% Adjusted-CLT UCL (Chen-1995)	0.522
		95% Modified-t UCL (Johnson-1978)	0.524

Nonparametric Distribution Free UCLs

95% CLT UCL	0.522	95% Jackknife UCL	0.524
95% Standard Bootstrap UCL	0.521	95% Bootstrap-t UCL	0.527
95% Hall's Bootstrap UCL	0.526	95% Percentile Bootstrap UCL	0.521
95% BCA Bootstrap UCL	0.522		
90% Chebyshev(Mean, Sd) UCL	0.529	95% Chebyshev(Mean, Sd) UCL	0.536
97.5% Chebyshev(Mean, Sd) UCL	0.545	99% Chebyshev(Mean, Sd) UCL	0.564

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.57	Mean	2.013
Maximum	2.16	Median	2.085
SD	0.22	Std. Error of Mean	0.09
Coefficient of Variation	0.109	Skewness	-2.292
Mean of logged Data	0.694	SD of logged Data	0.12

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.195	95% Adjusted-CLT UCL (Chen-1995)	2.071
		95% Modified-t UCL (Johnson-1978)	2.181

Nonparametric Distribution Free UCLs

95% CLT UCL	2.161	95% Jackknife UCL	2.195
95% Standard Bootstrap UCL	2.15	95% Bootstrap-t UCL	2.138
95% Hall's Bootstrap UCL	2.093	95% Percentile Bootstrap UCL	2.119
95% BCA Bootstrap UCL	2.108		
90% Chebyshev(Mean, Sd) UCL	2.283	95% Chebyshev(Mean, Sd) UCL	2.405
97.5% Chebyshev(Mean, Sd) UCL	2.575	99% Chebyshev(Mean, Sd) UCL	2.908

Suggested UCL to Use

95% Student's-t UCL	2.195	or 95% Modified-t UCL	2.181

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.63	Mean	5.61
Maximum	13.3	Median	3.91
SD	3.948	Std. Error of Mean	1.612
Coefficient of Variation	0.704	Skewness	2.004
Mean of logged Data	1.569	SD of logged Data	0.571

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.858	95% Adjusted-CLT UCL (Chen-1995)	9.67
		95% Modified-t UCL (Johnson-1978)	9.078

Nonparametric Distribution Free UCLs

95% CLT UCL	8.261	95% Jackknife UCL	8.858
95% Standard Bootstrap UCL	8.06	95% Bootstrap-t UCL	19.74
95% Hall's Bootstrap UCL	25.35	95% Percentile Bootstrap UCL	8.322
95% BCA Bootstrap UCL	9.162		
90% Chebyshev(Mean, Sd) UCL	10.45	95% Chebyshev(Mean, Sd) UCL	12.64
97.5% Chebyshev(Mean, Sd) UCL	15.68	99% Chebyshev(Mean, Sd) UCL	21.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.8	Mean	4.945
Maximum	9.38	Median	4.075
SD	2.391	Std. Error of Mean	0.976
Coefficient of Variation	0.483	Skewness	1.619
Mean of logged Data	1.516	SD of logged Data	0.427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.912	95% Adjusted-CLT UCL (Chen-1995)	7.24
		95% Modified-t UCL (Johnson-1978)	7.019

Nonparametric Distribution Free UCLs

95% CLT UCL	6.55	95% Jackknife UCL	6.912
95% Standard Bootstrap UCL	6.398	95% Bootstrap-t UCL	10.43
95% Hall's Bootstrap UCL	16.59	95% Percentile Bootstrap UCL	6.588
95% BCA Bootstrap UCL	6.95		
90% Chebyshev(Mean, Sd) UCL	7.873	95% Chebyshev(Mean, Sd) UCL	9.199
97.5% Chebyshev(Mean, Sd) UCL	11.04	99% Chebyshev(Mean, Sd) UCL	14.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.17	Mean	8.652
Maximum	15.2	Median	7.845
SD	3.761	Std. Error of Mean	1.536
Coefficient of Variation	0.435	Skewness	1.17
Mean of logged Data	2.085	SD of logged Data	0.41

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.75	95% Adjusted-CLT UCL (Chen-1995)	11.96
		95% Modified-t UCL (Johnson-1978)	11.87

Nonparametric Distribution Free UCLs

95% CLT UCL	11.18	95% Jackknife UCL	11.75
95% Standard Bootstrap UCL	10.95	95% Bootstrap-t UCL	13.93
95% Hall's Bootstrap UCL	26.56	95% Percentile Bootstrap UCL	11.13
95% BCA Bootstrap UCL	11.59		
90% Chebyshev(Mean, Sd) UCL	13.26	95% Chebyshev(Mean, Sd) UCL	15.35
97.5% Chebyshev(Mean, Sd) UCL	18.24	99% Chebyshev(Mean, Sd) UCL	23.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.35	Mean	3.813
Maximum	6.22	Median	3.68
SD	1.4	Std. Error of Mean	0.572
Coefficient of Variation	0.367	Skewness	0.995
Mean of logged Data	1.285	SD of logged Data	0.355

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.965	95% Adjusted-CLT UCL (Chen-1995)	5.001
		95% Modified-t UCL (Johnson-1978)	5.004

Nonparametric Distribution Free UCLs

95% CLT UCL	4.753	95% Jackknife UCL	4.965
95% Standard Bootstrap UCL	4.649	95% Bootstrap-t UCL	5.337
95% Hall's Bootstrap UCL	10.16	95% Percentile Bootstrap UCL	4.728
95% BCA Bootstrap UCL	4.878		
90% Chebyshev(Mean, Sd) UCL	5.528	95% Chebyshev(Mean, Sd) UCL	6.305
97.5% Chebyshev(Mean, Sd) UCL	7.383	99% Chebyshev(Mean, Sd) UCL	9.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.1	Mean	3.23
Maximum	5.62	Median	2.75
SD	1.337	Std. Error of Mean	0.546
Coefficient of Variation	0.414	Skewness	1.414
Mean of logged Data	1.11	SD of logged Data	0.374

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.33	95% Adjusted-CLT UCL (Chen-1995)	4.465
		95% Modified-t UCL (Johnson-1978)	4.382

Nonparametric Distribution Free UCLs

95% CLT UCL	4.128	95% Jackknife UCL	4.33
95% Standard Bootstrap UCL	4.028	95% Bootstrap-t UCL	6.381
95% Hall's Bootstrap UCL	9.141	95% Percentile Bootstrap UCL	4.102
95% BCA Bootstrap UCL	4.378		
90% Chebyshev(Mean, Sd) UCL	4.867	95% Chebyshev(Mean, Sd) UCL	5.609
97.5% Chebyshev(Mean, Sd) UCL	6.639	99% Chebyshev(Mean, Sd) UCL	8.661

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.85	Mean	6.715
Maximum	11.5	Median	5.965
SD	2.776	Std. Error of Mean	1.133
Coefficient of Variation	0.413	Skewness	1.132
Mean of logged Data	1.838	SD of logged Data	0.391

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.999	95% Adjusted-CLT UCL (Chen-1995)	9.139
		95% Modified-t UCL (Johnson-1978)	9.086

Nonparametric Distribution Free UCLs

95% CLT UCL	8.579	95% Jackknife UCL	8.999
95% Standard Bootstrap UCL	8.4	95% Bootstrap-t UCL	10.68
95% Hall's Bootstrap UCL	20.42	95% Percentile Bootstrap UCL	8.56
95% BCA Bootstrap UCL	8.665		
90% Chebyshev(Mean, Sd) UCL	10.11	95% Chebyshev(Mean, Sd) UCL	11.65
97.5% Chebyshev(Mean, Sd) UCL	13.79	99% Chebyshev(Mean, Sd) UCL	17.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.105	Mean	3.213
Maximum	3.325	Median	3.208
SD	0.0769	Std. Error of Mean	0.0314
Coefficient of Variation	0.0239	Skewness	0.141
Mean of logged Data	1.167	SD of logged Data	0.0239

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.276	95% Adjusted-CLT UCL (Chen-1995)	3.266
		95% Modified-t UCL (Johnson-1978)	3.276

Nonparametric Distribution Free UCLs

95% CLT UCL	3.264	95% Jackknife UCL	3.276
95% Standard Bootstrap UCL	3.26	95% Bootstrap-t UCL	3.283
95% Hall's Bootstrap UCL	3.293	95% Percentile Bootstrap UCL	3.261
95% BCA Bootstrap UCL	3.258		
90% Chebyshev(Mean, Sd) UCL	3.307	95% Chebyshev(Mean, Sd) UCL	3.349
97.5% Chebyshev(Mean, Sd) UCL	3.409	99% Chebyshev(Mean, Sd) UCL	3.525

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.06	Mean	7.707
Maximum	14.3	Median	7.225
SD	3.912	Std. Error of Mean	1.597
Coefficient of Variation	0.508	Skewness	0.854
Mean of logged Data	1.93	SD of logged Data	0.53

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.93	95% Adjusted-CLT UCL (Chen-1995)	10.93
		95% Modified-t UCL (Johnson-1978)	11.02

Nonparametric Distribution Free UCLs

95% CLT UCL	10.33	95% Jackknife UCL	10.93
95% Standard Bootstrap UCL	10.1	95% Bootstrap-t UCL	12.29
95% Hall's Bootstrap UCL	12.29	95% Percentile Bootstrap UCL	10.11
95% BCA Bootstrap UCL	10.47		
90% Chebyshev(Mean, Sd) UCL	12.5	95% Chebyshev(Mean, Sd) UCL	14.67
97.5% Chebyshev(Mean, Sd) UCL	17.68	99% Chebyshev(Mean, Sd) UCL	23.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.24	Mean	1.285
Maximum	1.33	Median	1.285
SD	0.0313	Std. Error of Mean	0.0128
Coefficient of Variation	0.0244	Skewness	1.334E-14
Mean of logged Data	0.251	SD of logged Data	0.0244

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.311	95% Adjusted-CLT UCL (Chen-1995)	1.306
		95% Modified-t UCL (Johnson-1978)	1.311

Nonparametric Distribution Free UCLs

95% CLT UCL	1.306	95% Jackknife UCL	1.311
95% Standard Bootstrap UCL	1.305	95% Bootstrap-t UCL	1.312
95% Hall's Bootstrap UCL	1.311	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.303		
90% Chebyshev(Mean, Sd) UCL	1.323	95% Chebyshev(Mean, Sd) UCL	1.341
97.5% Chebyshev(Mean, Sd) UCL	1.365	99% Chebyshev(Mean, Sd) UCL	1.412

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	2.315	Mean	3.666
Maximum	7.06	Median	3.12
SD	1.754	Std. Error of Mean	0.716
Coefficient of Variation	0.479	Skewness	1.923
Mean of logged Data	1.223	SD of logged Data	0.403

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.109	95% Adjusted-CLT UCL (Chen-1995)	5.444
		95% Modified-t UCL (Johnson-1978)	5.203

Nonparametric Distribution Free UCLs

95% CLT UCL	4.844	95% Jackknife UCL	5.109
95% Standard Bootstrap UCL	4.743	95% Bootstrap-t UCL	6.859
95% Hall's Bootstrap UCL	9.18	95% Percentile Bootstrap UCL	4.956
95% BCA Bootstrap UCL	5.193		
90% Chebyshev(Mean, Sd) UCL	5.814	95% Chebyshev(Mean, Sd) UCL	6.787
97.5% Chebyshev(Mean, Sd) UCL	8.138	99% Chebyshev(Mean, Sd) UCL	10.79

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.15	Mean	1.657
Maximum	1.91	Median	1.75
SD	0.283	Std. Error of Mean	0.116
Coefficient of Variation	0.171	Skewness	-1.39
Mean of logged Data	0.491	SD of logged Data	0.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.89	95% Adjusted-CLT UCL (Chen-1995)	1.777
		95% Modified-t UCL (Johnson-1978)	1.879

Nonparametric Distribution Free UCLs

95% CLT UCL	1.847	95% Jackknife UCL	1.89
95% Standard Bootstrap UCL	1.829	95% Bootstrap-t UCL	1.825
95% Hall's Bootstrap UCL	1.784	95% Percentile Bootstrap UCL	1.817

95% BCA Bootstrap UCL	1.797		
90% Chebyshev(Mean, Sd) UCL	2.004	95% Chebyshev(Mean, Sd) UCL	2.161
97.5% Chebyshev(Mean, Sd) UCL	2.379	99% Chebyshev(Mean, Sd) UCL	2.808

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.32	Mean	5.032
Maximum	13	Median	3.24
SD	4.014	Std. Error of Mean	1.639
Coefficient of Variation	0.798	Skewness	2.173
Mean of logged Data	1.428	SD of logged Data	0.613

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.334	95% Adjusted-CLT UCL (Chen-1995)	9.281
		95% Modified-t UCL (Johnson-1978)	8.576

Nonparametric Distribution Free UCLs

95% CLT UCL	7.727	95% Jackknife UCL	8.334
95% Standard Bootstrap UCL	7.534	95% Bootstrap-t UCL	25.47
95% Hall's Bootstrap UCL	27.79	95% Percentile Bootstrap UCL	7.967
95% BCA Bootstrap UCL	8.445		
90% Chebyshev(Mean, Sd) UCL	9.948	95% Chebyshev(Mean, Sd) UCL	12.17
97.5% Chebyshev(Mean, Sd) UCL	15.27	99% Chebyshev(Mean, Sd) UCL	21.34

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.94	Mean	10.85

Maximum	25.4	Median	7.93
SD	7.584	Std. Error of Mean	3.096
Coefficient of Variation	0.699	Skewness	1.879
Mean of logged Data	2.225	SD of logged Data	0.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.09	95% Adjusted-CLT UCL (Chen-1995)	18.48
		95% Modified-t UCL (Johnson-1978)	17.49

Nonparametric Distribution Free UCLs

95% CLT UCL	15.94	95% Jackknife UCL	17.09
95% Standard Bootstrap UCL	15.41	95% Bootstrap-t UCL	33.23
95% Hall's Bootstrap UCL	46	95% Percentile Bootstrap UCL	15.84
95% BCA Bootstrap UCL	17.95		
90% Chebyshev(Mean, Sd) UCL	20.14	95% Chebyshev(Mean, Sd) UCL	24.35
97.5% Chebyshev(Mean, Sd) UCL	30.19	99% Chebyshev(Mean, Sd) UCL	41.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:11:36 AM
From File	40005H.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.41	Mean	11.38
Maximum	13.8	Median	11.15
SD	1.906	Std. Error of Mean	0.778
Coefficient of Variation	0.167	Skewness	0.233
Mean of logged Data	2.42	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.95	95% Adjusted-CLT UCL (Chen-1995)	12.74
		95% Modified-t UCL (Johnson-1978)	12.96

Nonparametric Distribution Free UCLs

95% CLT UCL	12.66	95% Jackknife UCL	12.95
95% Standard Bootstrap UCL	12.54	95% Bootstrap-t UCL	13.01
95% Hall's Bootstrap UCL	12.37	95% Percentile Bootstrap UCL	12.59
95% BCA Bootstrap UCL	12.59		
90% Chebyshev(Mean, Sd) UCL	13.72	95% Chebyshev(Mean, Sd) UCL	14.78
97.5% Chebyshev(Mean, Sd) UCL	16.24	99% Chebyshev(Mean, Sd) UCL	19.13

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9	Mean	9.902
Maximum	10.7	Median	9.86
SD	0.636	Std. Error of Mean	0.26
Coefficient of Variation	0.0642	Skewness	-0.0991
Mean of logged Data	2.291	SD of logged Data	0.0645

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.42	95% Adjusted-CLT UCL (Chen-1995)	10.32
		95% Modified-t UCL (Johnson-1978)	10.42

Nonparametric Distribution Free UCLs

95% CLT UCL	10.33	95% Jackknife UCL	10.42
95% Standard Bootstrap UCL	10.29	95% Bootstrap-t UCL	10.45
95% Hall's Bootstrap UCL	10.44	95% Percentile Bootstrap UCL	10.28
95% BCA Bootstrap UCL	10.3		
90% Chebyshev(Mean, Sd) UCL	10.68	95% Chebyshev(Mean, Sd) UCL	11.03
97.5% Chebyshev(Mean, Sd) UCL	11.52	99% Chebyshev(Mean, Sd) UCL	12.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.1	Mean	41.42
Maximum	47	Median	41.2
SD	3.94	Std. Error of Mean	1.609
Coefficient of Variation	0.0951	Skewness	0.299
Mean of logged Data	3.72	SD of logged Data	0.0947

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.66	95% Adjusted-CLT UCL (Chen-1995)	44.27
		95% Modified-t UCL (Johnson-1978)	44.69

Nonparametric Distribution Free UCLs

95% CLT UCL	44.06	95% Jackknife UCL	44.66
95% Standard Bootstrap UCL	43.81	95% Bootstrap-t UCL	45.3
95% Hall's Bootstrap UCL	44.33	95% Percentile Bootstrap UCL	43.82
95% BCA Bootstrap UCL	43.82		
90% Chebyshev(Mean, Sd) UCL	46.24	95% Chebyshev(Mean, Sd) UCL	48.43
97.5% Chebyshev(Mean, Sd) UCL	51.46	99% Chebyshev(Mean, Sd) UCL	57.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.758	Mean	1.382
Maximum	1.93	Median	1.4
SD	0.538	Std. Error of Mean	0.22
Coefficient of Variation	0.389	Skewness	-0.0675
Mean of logged Data	0.255	SD of logged Data	0.415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.825	95% Adjusted-CLT UCL (Chen-1995)	1.737
		95% Modified-t UCL (Johnson-1978)	1.824

Nonparametric Distribution Free UCLs

95% CLT UCL	1.744	95% Jackknife UCL	1.825
95% Standard Bootstrap UCL	1.71	95% Bootstrap-t UCL	1.82
95% Hall's Bootstrap UCL	1.586	95% Percentile Bootstrap UCL	1.711
95% BCA Bootstrap UCL	1.702		
90% Chebyshev(Mean, Sd) UCL	2.041	95% Chebyshev(Mean, Sd) UCL	2.34
97.5% Chebyshev(Mean, Sd) UCL	2.754	99% Chebyshev(Mean, Sd) UCL	3.568

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.323	Mean	0.542
Maximum	0.893	Median	0.514
SD	0.188	Std. Error of Mean	0.0768
Coefficient of Variation	0.347	Skewness	1.45
Mean of logged Data	-0.657	SD of logged Data	0.325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.697	95% Adjusted-CLT UCL (Chen-1995)	0.717
		95% Modified-t UCL (Johnson-1978)	0.705

Nonparametric Distribution Free UCLs

95% CLT UCL	0.669	95% Jackknife UCL	0.697
95% Standard Bootstrap UCL	0.66	95% Bootstrap-t UCL	0.823
95% Hall's Bootstrap UCL	1.395	95% Percentile Bootstrap UCL	0.669
95% BCA Bootstrap UCL	0.701		
90% Chebyshev(Mean, Sd) UCL	0.773	95% Chebyshev(Mean, Sd) UCL	0.877
97.5% Chebyshev(Mean, Sd) UCL	1.022	99% Chebyshev(Mean, Sd) UCL	1.307

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.64	Mean	2.003
Maximum	2.16	Median	2.058
SD	0.194	Std. Error of Mean	0.0791
Coefficient of Variation	0.0967	Skewness	-1.67
Mean of logged Data	0.691	SD of logged Data	0.103

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.163	95% Adjusted-CLT UCL (Chen-1995)	2.076
		95% Modified-t UCL (Johnson-1978)	2.154

Nonparametric Distribution Free UCLs

95% CLT UCL	2.133	95% Jackknife UCL	2.163
95% Standard Bootstrap UCL	2.12	95% Bootstrap-t UCL	2.112
95% Hall's Bootstrap UCL	2.09	95% Percentile Bootstrap UCL	2.112
95% BCA Bootstrap UCL	2.09		
90% Chebyshev(Mean, Sd) UCL	2.241	95% Chebyshev(Mean, Sd) UCL	2.348
97.5% Chebyshev(Mean, Sd) UCL	2.497	99% Chebyshev(Mean, Sd) UCL	2.791

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	3.566
Maximum	6	Median	3.04
SD	1.747	Std. Error of Mean	0.713
Coefficient of Variation	0.49	Skewness	0.601
Mean of logged Data	1.171	SD of logged Data	0.489

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.003	95% Adjusted-CLT UCL (Chen-1995)	4.926
		95% Modified-t UCL (Johnson-1978)	5.032

Nonparametric Distribution Free UCLs

95% CLT UCL	4.739	95% Jackknife UCL	5.003
95% Standard Bootstrap UCL	4.649	95% Bootstrap-t UCL	6.672
95% Hall's Bootstrap UCL	5.4	95% Percentile Bootstrap UCL	4.633
95% BCA Bootstrap UCL	4.79		
90% Chebyshev(Mean, Sd) UCL	5.706	95% Chebyshev(Mean, Sd) UCL	6.675
97.5% Chebyshev(Mean, Sd) UCL	8.02	99% Chebyshev(Mean, Sd) UCL	10.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	4.753
Maximum	8.03	Median	4.51
SD	2.826	Std. Error of Mean	1.154
Coefficient of Variation	0.595	Skewness	0.116
Mean of logged Data	1.386	SD of logged Data	0.664

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.078	95% Adjusted-CLT UCL (Chen-1995)	6.709
		95% Modified-t UCL (Johnson-1978)	7.087

Nonparametric Distribution Free UCLs

95% CLT UCL	6.651	95% Jackknife UCL	7.078
95% Standard Bootstrap UCL	6.491	95% Bootstrap-t UCL	7.076
95% Hall's Bootstrap UCL	5.824	95% Percentile Bootstrap UCL	6.558
95% BCA Bootstrap UCL	6.546		
90% Chebyshev(Mean, Sd) UCL	8.214	95% Chebyshev(Mean, Sd) UCL	9.782
97.5% Chebyshev(Mean, Sd) UCL	11.96	99% Chebyshev(Mean, Sd) UCL	16.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.65	Mean	5.908
Maximum	9.59	Median	5.335
SD	3.241	Std. Error of Mean	1.323
Coefficient of Variation	0.549	Skewness	0.242
Mean of logged Data	1.637	SD of logged Data	0.588

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.574	95% Adjusted-CLT UCL (Chen-1995)	8.224
		95% Modified-t UCL (Johnson-1978)	8.596

Nonparametric Distribution Free UCLs

95% CLT UCL	8.084	95% Jackknife UCL	8.574
95% Standard Bootstrap UCL	7.916	95% Bootstrap-t UCL	8.344
95% Hall's Bootstrap UCL	7.314	95% Percentile Bootstrap UCL	7.997
95% BCA Bootstrap UCL	8.036		
90% Chebyshev(Mean, Sd) UCL	9.877	95% Chebyshev(Mean, Sd) UCL	11.68
97.5% Chebyshev(Mean, Sd) UCL	14.17	99% Chebyshev(Mean, Sd) UCL	19.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	3.609
Maximum	4.58	Median	3.335
SD	0.66	Std. Error of Mean	0.269
Coefficient of Variation	0.183	Skewness	0.848
Mean of logged Data	1.27	SD of logged Data	0.176

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.152	95% Adjusted-CLT UCL (Chen-1995)	4.152
		95% Modified-t UCL (Johnson-1978)	4.168

Nonparametric Distribution Free UCLs

95% CLT UCL	4.052	95% Jackknife UCL	4.152
95% Standard Bootstrap UCL	4.007	95% Bootstrap-t UCL	4.927
95% Hall's Bootstrap UCL	4.977	95% Percentile Bootstrap UCL	4.05
95% BCA Bootstrap UCL	4.081		
90% Chebyshev(Mean, Sd) UCL	4.418	95% Chebyshev(Mean, Sd) UCL	4.784
97.5% Chebyshev(Mean, Sd) UCL	5.292	99% Chebyshev(Mean, Sd) UCL	6.29

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	3
Maximum	4.46	Median	2.598
SD	1.172	Std. Error of Mean	0.478
Coefficient of Variation	0.391	Skewness	0.524
Mean of logged Data	1.036	SD of logged Data	0.385

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.964	95% Adjusted-CLT UCL (Chen-1995)	3.896
		95% Modified-t UCL (Johnson-1978)	3.981

Nonparametric Distribution Free UCLs

95% CLT UCL	3.787	95% Jackknife UCL	3.964
95% Standard Bootstrap UCL	3.689	95% Bootstrap-t UCL	5.08
95% Hall's Bootstrap UCL	4.014	95% Percentile Bootstrap UCL	3.784
95% BCA Bootstrap UCL	3.801		
90% Chebyshev(Mean, Sd) UCL	4.435	95% Chebyshev(Mean, Sd) UCL	5.085
97.5% Chebyshev(Mean, Sd) UCL	5.987	99% Chebyshev(Mean, Sd) UCL	7.759

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	4.939
Maximum	8.45	Median	4.39
SD	2.8	Std. Error of Mean	1.143
Coefficient of Variation	0.567	Skewness	0.264
Mean of logged Data	1.447	SD of logged Data	0.616

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.242	95% Adjusted-CLT UCL (Chen-1995)	6.951
		95% Modified-t UCL (Johnson-1978)	7.263

Nonparametric Distribution Free UCLs

95% CLT UCL	6.819	95% Jackknife UCL	7.242
95% Standard Bootstrap UCL	6.658	95% Bootstrap-t UCL	7.346
95% Hall's Bootstrap UCL	6.221	95% Percentile Bootstrap UCL	6.657
95% BCA Bootstrap UCL	6.704		
90% Chebyshev(Mean, Sd) UCL	8.368	95% Chebyshev(Mean, Sd) UCL	9.921
97.5% Chebyshev(Mean, Sd) UCL	12.08	99% Chebyshev(Mean, Sd) UCL	16.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	3.214
Maximum	3.325	Median	3.26
SD	0.13	Std. Error of Mean	0.053
Coefficient of Variation	0.0404	Skewness	-0.921
Mean of logged Data	1.167	SD of logged Data	0.0409

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.321	95% Adjusted-CLT UCL (Chen-1995)	3.28
		95% Modified-t UCL (Johnson-1978)	3.318

Nonparametric Distribution Free UCLs

95% CLT UCL	3.301	95% Jackknife UCL	3.321
95% Standard Bootstrap UCL	3.292	95% Bootstrap-t UCL	3.3
95% Hall's Bootstrap UCL	3.275	95% Percentile Bootstrap UCL	3.286
95% BCA Bootstrap UCL	3.282		
90% Chebyshev(Mean, Sd) UCL	3.373	95% Chebyshev(Mean, Sd) UCL	3.445
97.5% Chebyshev(Mean, Sd) UCL	3.545	99% Chebyshev(Mean, Sd) UCL	3.742

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.23	Mean	8.188
Maximum	15.6	Median	7.565
SD	5.083	Std. Error of Mean	2.075
Coefficient of Variation	0.621	Skewness	0.405
Mean of logged Data	1.907	SD of logged Data	0.728

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.37	95% Adjusted-CLT UCL (Chen-1995)	11.97
		95% Modified-t UCL (Johnson-1978)	12.43

Nonparametric Distribution Free UCLs

95% CLT UCL	11.6	95% Jackknife UCL	12.37
95% Standard Bootstrap UCL	11.41	95% Bootstrap-t UCL	13.91
95% Hall's Bootstrap UCL	12.57	95% Percentile Bootstrap UCL	11.25
95% BCA Bootstrap UCL	11.4		
90% Chebyshev(Mean, Sd) UCL	14.41	95% Chebyshev(Mean, Sd) UCL	17.23
97.5% Chebyshev(Mean, Sd) UCL	21.15	99% Chebyshev(Mean, Sd) UCL	28.83

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.2	Mean	1.286
Maximum	1.33	Median	1.305
SD	0.0523	Std. Error of Mean	0.0213
Coefficient of Variation	0.0407	Skewness	-0.991
Mean of logged Data	0.251	SD of logged Data	0.0413

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.329	95% Adjusted-CLT UCL (Chen-1995)	1.312
		95% Modified-t UCL (Johnson-1978)	1.327

Nonparametric Distribution Free UCLs

95% CLT UCL	1.321	95% Jackknife UCL	1.329
95% Standard Bootstrap UCL	1.318	95% Bootstrap-t UCL	1.32
95% Hall's Bootstrap UCL	1.31	95% Percentile Bootstrap UCL	1.314
95% BCA Bootstrap UCL	1.313		
90% Chebyshev(Mean, Sd) UCL	1.35	95% Chebyshev(Mean, Sd) UCL	1.379
97.5% Chebyshev(Mean, Sd) UCL	1.419	99% Chebyshev(Mean, Sd) UCL	1.498

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	3.934
Maximum	5.39	Median	3.605
SD	1.007	Std. Error of Mean	0.411
Coefficient of Variation	0.256	Skewness	0.65
Mean of logged Data	1.343	SD of logged Data	0.249

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.762	95% Adjusted-CLT UCL (Chen-1995)	4.727
		95% Modified-t UCL (Johnson-1978)	4.781

Nonparametric Distribution Free UCLs

95% CLT UCL	4.61	95% Jackknife UCL	4.762
95% Standard Bootstrap UCL	4.557	95% Bootstrap-t UCL	5.078
95% Hall's Bootstrap UCL	4.897	95% Percentile Bootstrap UCL	4.591
95% BCA Bootstrap UCL	4.61		
90% Chebyshev(Mean, Sd) UCL	5.167	95% Chebyshev(Mean, Sd) UCL	5.726
97.5% Chebyshev(Mean, Sd) UCL	6.501	99% Chebyshev(Mean, Sd) UCL	8.024

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.701	Mean	1.584
Maximum	3.14	Median	1.285
SD	0.926	Std. Error of Mean	0.378
Coefficient of Variation	0.584	Skewness	1.06
Mean of logged Data	0.324	SD of logged Data	0.566

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.346	95% Adjusted-CLT UCL (Chen-1995)	2.381
		95% Modified-t UCL (Johnson-1978)	2.373

Nonparametric Distribution Free UCLs

95% CLT UCL	2.206	95% Jackknife UCL	2.346
95% Standard Bootstrap UCL	2.161	95% Bootstrap-t UCL	2.846
95% Hall's Bootstrap UCL	4.79	95% Percentile Bootstrap UCL	2.215
95% BCA Bootstrap UCL	2.35		
90% Chebyshev(Mean, Sd) UCL	2.718	95% Chebyshev(Mean, Sd) UCL	3.231
97.5% Chebyshev(Mean, Sd) UCL	3.944	99% Chebyshev(Mean, Sd) UCL	5.344

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	4.846
Maximum	9.62	Median	3.71
SD	2.584	Std. Error of Mean	1.055
Coefficient of Variation	0.533	Skewness	1.633
Mean of logged Data	1.48	SD of logged Data	0.462

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.972	95% Adjusted-CLT UCL (Chen-1995)	7.333
		95% Modified-t UCL (Johnson-1978)	7.089

Nonparametric Distribution Free UCLs

95% CLT UCL	6.581	95% Jackknife UCL	6.972
95% Standard Bootstrap UCL	6.424	95% Bootstrap-t UCL	13.43
95% Hall's Bootstrap UCL	15.88	95% Percentile Bootstrap UCL	6.548
95% BCA Bootstrap UCL	7.018		
90% Chebyshev(Mean, Sd) UCL	8.011	95% Chebyshev(Mean, Sd) UCL	9.445
97.5% Chebyshev(Mean, Sd) UCL	11.43	99% Chebyshev(Mean, Sd) UCL	15.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.65	Mean	7.356
Maximum	13	Median	6.74
SD	4.492	Std. Error of Mean	1.834
Coefficient of Variation	0.611	Skewness	0.273
Mean of logged Data	1.813	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.05	95% Adjusted-CLT UCL (Chen-1995)	10.59
		95% Modified-t UCL (Johnson-1978)	11.09

Nonparametric Distribution Free UCLs

95% CLT UCL	10.37	95% Jackknife UCL	11.05
95% Standard Bootstrap UCL	10.14	95% Bootstrap-t UCL	11.1
95% Hall's Bootstrap UCL	10.52	95% Percentile Bootstrap UCL	10.18
95% BCA Bootstrap UCL	10.35		
90% Chebyshev(Mean, Sd) UCL	12.86	95% Chebyshev(Mean, Sd) UCL	15.35
97.5% Chebyshev(Mean, Sd) UCL	18.81	99% Chebyshev(Mean, Sd) UCL	25.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:12:47 AM
From File	40005I.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.89	Mean	9.43
Maximum	10.1	Median	9.36
SD	0.56	Std. Error of Mean	0.229
Coefficient of Variation	0.0594	Skewness	0.153
Mean of logged Data	2.242	SD of logged Data	0.0593

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.891	95% Adjusted-CLT UCL (Chen-1995)	9.822
		95% Modified-t UCL (Johnson-1978)	9.893

Nonparametric Distribution Free UCLs

95% CLT UCL	9.806	95% Jackknife UCL	9.891
95% Standard Bootstrap UCL	9.78	95% Bootstrap-t UCL	9.879
95% Hall's Bootstrap UCL	9.635	95% Percentile Bootstrap UCL	9.803
95% BCA Bootstrap UCL	9.778		
90% Chebyshev(Mean, Sd) UCL	10.12	95% Chebyshev(Mean, Sd) UCL	10.43
97.5% Chebyshev(Mean, Sd) UCL	10.86	99% Chebyshev(Mean, Sd) UCL	11.71

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.82	Mean	8.588
Maximum	9.27	Median	8.49
SD	0.502	Std. Error of Mean	0.205
Coefficient of Variation	0.0585	Skewness	-0.169
Mean of logged Data	2.149	SD of logged Data	0.0588

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.001	95% Adjusted-CLT UCL (Chen-1995)	8.91
		95% Modified-t UCL (Johnson-1978)	8.999

Nonparametric Distribution Free UCLs

95% CLT UCL	8.926	95% Jackknife UCL	9.001
95% Standard Bootstrap UCL	8.893	95% Bootstrap-t UCL	9.059
95% Hall's Bootstrap UCL	9.223	95% Percentile Bootstrap UCL	8.89
95% BCA Bootstrap UCL	8.875		
90% Chebyshev(Mean, Sd) UCL	9.203	95% Chebyshev(Mean, Sd) UCL	9.482
97.5% Chebyshev(Mean, Sd) UCL	9.869	99% Chebyshev(Mean, Sd) UCL	10.63

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	35	Mean	37.3
Maximum	39.3	Median	37.65
SD	1.74	Std. Error of Mean	0.71
Coefficient of Variation	0.0467	Skewness	-0.384
Mean of logged Data	3.618	SD of logged Data	0.047

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.73	95% Adjusted-CLT UCL (Chen-1995)	38.35
		95% Modified-t UCL (Johnson-1978)	38.71

Nonparametric Distribution Free UCLs

95% CLT UCL	38.47	95% Jackknife UCL	38.73
95% Standard Bootstrap UCL	38.39	95% Bootstrap-t UCL	38.55
95% Hall's Bootstrap UCL	38.13	95% Percentile Bootstrap UCL	38.3
95% BCA Bootstrap UCL	38.3		
90% Chebyshev(Mean, Sd) UCL	39.43	95% Chebyshev(Mean, Sd) UCL	40.4
97.5% Chebyshev(Mean, Sd) UCL	41.74	99% Chebyshev(Mean, Sd) UCL	44.37

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.585	Mean	1.272
Maximum	1.98	Median	1.29
SD	0.695	Std. Error of Mean	0.284
Coefficient of Variation	0.546	Skewness	-0.00149
Mean of logged Data	0.0962	SD of logged Data	0.604

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.843	95% Adjusted-CLT UCL (Chen-1995)	1.738
		95% Modified-t UCL (Johnson-1978)	1.843

Nonparametric Distribution Free UCLs

95% CLT UCL	1.738	95% Jackknife UCL	1.843
95% Standard Bootstrap UCL	1.692	95% Bootstrap-t UCL	1.854
95% Hall's Bootstrap UCL	1.506	95% Percentile Bootstrap UCL	1.694
95% BCA Bootstrap UCL	1.693		
90% Chebyshev(Mean, Sd) UCL	2.123	95% Chebyshev(Mean, Sd) UCL	2.508
97.5% Chebyshev(Mean, Sd) UCL	3.043	99% Chebyshev(Mean, Sd) UCL	4.094

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.486	Mean	0.525
Maximum	0.618	Median	0.509

SD	0.0485	Std. Error of Mean	0.0198
Coefficient of Variation	0.0925	Skewness	1.865
Mean of logged Data	-0.648	SD of logged Data	0.0879

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.565	95% Adjusted-CLT UCL (Chen-1995)	0.573
		95% Modified-t UCL (Johnson-1978)	0.567

Nonparametric Distribution Free UCLs

95% CLT UCL	0.557	95% Jackknife UCL	0.565
95% Standard Bootstrap UCL	0.554	95% Bootstrap-t UCL	0.631
95% Hall's Bootstrap UCL	0.687	95% Percentile Bootstrap UCL	0.556
95% BCA Bootstrap UCL	0.567		
90% Chebyshev(Mean, Sd) UCL	0.584	95% Chebyshev(Mean, Sd) UCL	0.611
97.5% Chebyshev(Mean, Sd) UCL	0.648	99% Chebyshev(Mean, Sd) UCL	0.722

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.53	Mean	1.967
Maximum	2.14	Median	2.02
SD	0.224	Std. Error of Mean	0.0913
Coefficient of Variation	0.114	Skewness	-1.99
Mean of logged Data	0.67	SD of logged Data	0.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.151	95% Adjusted-CLT UCL (Chen-1995)	2.038
		95% Modified-t UCL (Johnson-1978)	2.138

Nonparametric Distribution Free UCLs

95% CLT UCL	2.117	95% Jackknife UCL	2.151
95% Standard Bootstrap UCL	2.103	95% Bootstrap-t UCL	2.084
95% Hall's Bootstrap UCL	2.057	95% Percentile Bootstrap UCL	2.08
95% BCA Bootstrap UCL	2.065		
90% Chebyshev(Mean, Sd) UCL	2.24	95% Chebyshev(Mean, Sd) UCL	2.365

97.5% Chebyshev(Mean, Sd) UCL	2.537	99% Chebyshev(Mean, Sd) UCL	2.875

Suggested UCL to Use

95% Student's-t UCL	2.151	or 95% Modified-t UCL	2.138

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.97	Mean	3.33
Maximum	9.71	Median	2.07
SD	3.126	Std. Error of Mean	1.276
Coefficient of Variation	0.939	Skewness	2.447
Mean of logged Data	0.978	SD of logged Data	0.635

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.902	95% Adjusted-CLT UCL (Chen-1995)	6.792
		95% Modified-t UCL (Johnson-1978)	6.114

Nonparametric Distribution Free UCLs

95% CLT UCL	5.429	95% Jackknife UCL	5.902
95% Standard Bootstrap UCL	5.282	95% Bootstrap-t UCL	80.62
95% Hall's Bootstrap UCL	58.85	95% Percentile Bootstrap UCL	5.868
95% BCA Bootstrap UCL	5.902		
90% Chebyshev(Mean, Sd) UCL	7.159	95% Chebyshev(Mean, Sd) UCL	8.893
97.5% Chebyshev(Mean, Sd) UCL	11.3	99% Chebyshev(Mean, Sd) UCL	16.03

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.893

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.02	Mean	3.542

Maximum	10	Median	2.325
SD	3.173	Std. Error of Mean	1.295
Coefficient of Variation	0.896	Skewness	2.419
Mean of logged Data	1.055	SD of logged Data	0.62

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.152	95% Adjusted-CLT UCL (Chen-1995)	7.039
		95% Modified-t UCL (Johnson-1978)	6.365

Nonparametric Distribution Free UCLs

95% CLT UCL	5.672	95% Jackknife UCL	6.152
95% Standard Bootstrap UCL	5.498	95% Bootstrap-t UCL	25.31
95% Hall's Bootstrap UCL	23.61	95% Percentile Bootstrap UCL	6.092
95% BCA Bootstrap UCL	6.19		
90% Chebyshev(Mean, Sd) UCL	7.428	95% Chebyshev(Mean, Sd) UCL	9.188
97.5% Chebyshev(Mean, Sd) UCL	11.63	99% Chebyshev(Mean, Sd) UCL	16.43

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.188

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.61	Mean	4.964
Maximum	14.3	Median	3.203
SD	4.581	Std. Error of Mean	1.87
Coefficient of Variation	0.923	Skewness	2.431
Mean of logged Data	1.382	SD of logged Data	0.632

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.733	95% Adjusted-CLT UCL (Chen-1995)	10.02
		95% Modified-t UCL (Johnson-1978)	9.042

Nonparametric Distribution Free UCLs

95% CLT UCL	8.04	95% Jackknife UCL	8.733
95% Standard Bootstrap UCL	7.788	95% Bootstrap-t UCL	72.45
95% Hall's Bootstrap UCL	48	95% Percentile Bootstrap UCL	8.663
95% BCA Bootstrap UCL	8.788		

90% Chebyshev(Mean, Sd) UCL	10.57	95% Chebyshev(Mean, Sd) UCL	13.12
97.5% Chebyshev(Mean, Sd) UCL	16.64	99% Chebyshev(Mean, Sd) UCL	23.57

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.12

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.035	Mean	3.628
Maximum	5.95	Median	3.188
SD	1.142	Std. Error of Mean	0.466
Coefficient of Variation	0.315	Skewness	2.408
Mean of logged Data	1.256	SD of logged Data	0.26

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.567	95% Adjusted-CLT UCL (Chen-1995)	4.884
		95% Modified-t UCL (Johnson-1978)	4.643

Nonparametric Distribution Free UCLs

95% CLT UCL	4.394	95% Jackknife UCL	4.567
95% Standard Bootstrap UCL	4.325	95% Bootstrap-t UCL	10.38
95% Hall's Bootstrap UCL	9.521	95% Percentile Bootstrap UCL	4.536
95% BCA Bootstrap UCL	4.582		
90% Chebyshev(Mean, Sd) UCL	5.026	95% Chebyshev(Mean, Sd) UCL	5.66
97.5% Chebyshev(Mean, Sd) UCL	6.539	99% Chebyshev(Mean, Sd) UCL	8.267

Suggested UCL to Use

95% Student's-t UCL	4.567	or 95% Modified-t UCL	4.643

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.97	Mean	2.717
Maximum	6.03	Median	2.07
SD	1.624	Std. Error of Mean	0.663
Coefficient of Variation	0.598	Skewness	2.441
Mean of logged Data	0.899	SD of logged Data	0.441

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.053	95% Adjusted-CLT UCL (Chen-1995)	4.514
		95% Modified-t UCL (Johnson-1978)	4.163

Nonparametric Distribution Free UCLs

95% CLT UCL	3.808	95% Jackknife UCL	4.053
95% Standard Bootstrap UCL	3.716	95% Bootstrap-t UCL	23.38
95% Hall's Bootstrap UCL	17.85	95% Percentile Bootstrap UCL	4.028
95% BCA Bootstrap UCL	4.062		
90% Chebyshev(Mean, Sd) UCL	4.706	95% Chebyshev(Mean, Sd) UCL	5.607
97.5% Chebyshev(Mean, Sd) UCL	6.858	99% Chebyshev(Mean, Sd) UCL	9.315

Suggested UCL to Use

95% Student's-t UCL	4.053	or 95% Modified-t UCL	4.163

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.02	Mean	4.155
Maximum	14	Median	2.15
SD	4.828	Std. Error of Mean	1.971
Coefficient of Variation	1.162	Skewness	2.439
Mean of logged Data	1.088	SD of logged Data	0.765

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.126	95% Adjusted-CLT UCL (Chen-1995)	9.494
		95% Modified-t UCL (Johnson-1978)	8.453

Nonparametric Distribution Free UCLs

95% CLT UCL	7.397	95% Jackknife UCL	8.126
95% Standard Bootstrap UCL	7.091	95% Bootstrap-t UCL	150.2
95% Hall's Bootstrap UCL	85.13	95% Percentile Bootstrap UCL	8.033
95% BCA Bootstrap UCL	8.295		
90% Chebyshev(Mean, Sd) UCL	10.07	95% Chebyshev(Mean, Sd) UCL	12.75
97.5% Chebyshev(Mean, Sd) UCL	16.46	99% Chebyshev(Mean, Sd) UCL	23.76

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.75

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.035	Mean	3.16
Maximum	3.295	Median	3.128
SD	0.1	Std. Error of Mean	0.0409
Coefficient of Variation	0.0317	Skewness	0.422
Mean of logged Data	1.15	SD of logged Data	0.0316

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.242	95% Adjusted-CLT UCL (Chen-1995)	3.235
		95% Modified-t UCL (Johnson-1978)	3.244

Nonparametric Distribution Free UCLs

95% CLT UCL	3.227	95% Jackknife UCL	3.242
95% Standard Bootstrap UCL	3.223	95% Bootstrap-t UCL	3.313
95% Hall's Bootstrap UCL	3.439	95% Percentile Bootstrap UCL	3.223
95% BCA Bootstrap UCL	3.224		
90% Chebyshev(Mean, Sd) UCL	3.283	95% Chebyshev(Mean, Sd) UCL	3.338
97.5% Chebyshev(Mean, Sd) UCL	3.415	99% Chebyshev(Mean, Sd) UCL	3.567

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.02	Mean	5.797
Maximum	21.3	Median	2.715
SD	7.638	Std. Error of Mean	3.118
Coefficient of Variation	1.318	Skewness	2.388
Mean of logged Data	1.301	SD of logged Data	0.907

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.08	95% Adjusted-CLT UCL (Chen-1995)	14.17
		95% Modified-t UCL (Johnson-1978)	12.59

Nonparametric Distribution Free UCLs

95% CLT UCL	10.93	95% Jackknife UCL	12.08
95% Standard Bootstrap UCL	10.44	95% Bootstrap-t UCL	58.32
95% Hall's Bootstrap UCL	45.93	95% Percentile Bootstrap UCL	11.87
95% BCA Bootstrap UCL	12.32		
90% Chebyshev(Mean, Sd) UCL	15.15	95% Chebyshev(Mean, Sd) UCL	19.39
97.5% Chebyshev(Mean, Sd) UCL	25.27	99% Chebyshev(Mean, Sd) UCL	36.82

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.215	Mean	1.264
Maximum	1.32	Median	1.25
SD	0.0401	Std. Error of Mean	0.0164
Coefficient of Variation	0.0317	Skewness	0.506
Mean of logged Data	0.234	SD of logged Data	0.0315

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.297	95% Adjusted-CLT UCL (Chen-1995)	1.295
		95% Modified-t UCL (Johnson-1978)	1.298

Nonparametric Distribution Free UCLs

95% CLT UCL	1.291	95% Jackknife UCL	1.297
95% Standard Bootstrap UCL	1.289	95% Bootstrap-t UCL	1.328
95% Hall's Bootstrap UCL	1.636	95% Percentile Bootstrap UCL	1.289
95% BCA Bootstrap UCL	1.292		
90% Chebyshev(Mean, Sd) UCL	1.313	95% Chebyshev(Mean, Sd) UCL	1.335
97.5% Chebyshev(Mean, Sd) UCL	1.366	99% Chebyshev(Mean, Sd) UCL	1.427

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.035	Mean	3.808
Maximum	7.03	Median	3.188
SD	1.582	Std. Error of Mean	0.646
Coefficient of Variation	0.415	Skewness	2.428
Mean of logged Data	1.284	SD of logged Data	0.328

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.109	95% Adjusted-CLT UCL (Chen-1995)	5.554
		95% Modified-t UCL (Johnson-1978)	5.215

Nonparametric Distribution Free UCLs

95% CLT UCL	4.87	95% Jackknife UCL	5.109
95% Standard Bootstrap UCL	4.769	95% Bootstrap-t UCL	16.57
95% Hall's Bootstrap UCL	13.97	95% Percentile Bootstrap UCL	5.07
95% BCA Bootstrap UCL	5.132		
90% Chebyshev(Mean, Sd) UCL	5.745	95% Chebyshev(Mean, Sd) UCL	6.622
97.5% Chebyshev(Mean, Sd) UCL	7.84	99% Chebyshev(Mean, Sd) UCL	10.23

Suggested UCL to Use

95% Student's-t UCL	5.109	or 95% Modified-t UCL	5.215

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.935	Mean	2.281
Maximum	7.16	Median	1.465
SD	2.408	Std. Error of Mean	0.983
Coefficient of Variation	1.056	Skewness	2.369
Mean of logged Data	0.528	SD of logged Data	0.743

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.262	95% Adjusted-CLT UCL (Chen-1995)	4.914
		95% Modified-t UCL (Johnson-1978)	4.42

Nonparametric Distribution Free UCLs

95% CLT UCL	3.898	95% Jackknife UCL	4.262
95% Standard Bootstrap UCL	3.791	95% Bootstrap-t UCL	12.29
95% Hall's Bootstrap UCL	14.43	95% Percentile Bootstrap UCL	4.139
95% BCA Bootstrap UCL	4.318		
90% Chebyshev(Mean, Sd) UCL	5.23	95% Chebyshev(Mean, Sd) UCL	6.566
97.5% Chebyshev(Mean, Sd) UCL	8.42	99% Chebyshev(Mean, Sd) UCL	12.06

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.566

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.035	Mean	4.319
Maximum	10.1	Median	3.188
SD	2.834	Std. Error of Mean	1.157
Coefficient of Variation	0.656	Skewness	2.443
Mean of logged Data	1.345	SD of logged Data	0.475

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.65	95% Adjusted-CLT UCL (Chen-1995)	7.455
		95% Modified-t UCL (Johnson-1978)	6.843

Nonparametric Distribution Free UCLs

95% CLT UCL	6.222	95% Jackknife UCL	6.65
95% Standard Bootstrap UCL	6.058	95% Bootstrap-t UCL	46.15
95% Hall's Bootstrap UCL	33.18	95% Percentile Bootstrap UCL	6.618
95% BCA Bootstrap UCL	6.688		
90% Chebyshev(Mean, Sd) UCL	7.79	95% Chebyshev(Mean, Sd) UCL	9.362
97.5% Chebyshev(Mean, Sd) UCL	11.54	99% Chebyshev(Mean, Sd) UCL	15.83

Suggested UCL to Use

95% Student's-t UCL	6.65	or 95% Modified-t UCL	6.843

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.79	Mean	5.678
Maximum	18.3	Median	3.203
SD	6.188	Std. Error of Mean	2.526
Coefficient of Variation	1.09	Skewness	2.442
Mean of logged Data	1.439	SD of logged Data	0.723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.77	95% Adjusted-CLT UCL (Chen-1995)	12.52
		95% Modified-t UCL (Johnson-1978)	11.19

Nonparametric Distribution Free UCLs

95% CLT UCL	9.833	95% Jackknife UCL	10.77
95% Standard Bootstrap UCL	9.534	95% Bootstrap-t UCL	109.5
95% Hall's Bootstrap UCL	77.77	95% Percentile Bootstrap UCL	10.65
95% BCA Bootstrap UCL	10.85		
90% Chebyshev(Mean, Sd) UCL	13.26	95% Chebyshev(Mean, Sd) UCL	16.69
97.5% Chebyshev(Mean, Sd) UCL	21.45	99% Chebyshev(Mean, Sd) UCL	30.81

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	16.69

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:13:57 AM
From File	40005J.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.47	Mean	9.467
Maximum	10.7	Median	9.445
SD	0.73	Std. Error of Mean	0.298
Coefficient of Variation	0.0772	Skewness	0.657
Mean of logged Data	2.245	SD of logged Data	0.0763

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.07	95% Adjusted-CLT UCL (Chen-1995)	10.04
		95% Modified-t UCL (Johnson-1978)	10.08

Nonparametric Distribution Free UCLs

95% CLT UCL	9.957	95% Jackknife UCL	10.07
95% Standard Bootstrap UCL	9.926	95% Bootstrap-t UCL	10.13
95% Hall's Bootstrap UCL	10.48	95% Percentile Bootstrap UCL	9.912
95% BCA Bootstrap UCL	9.997		
90% Chebyshev(Mean, Sd) UCL	10.36	95% Chebyshev(Mean, Sd) UCL	10.77
97.5% Chebyshev(Mean, Sd) UCL	11.33	99% Chebyshev(Mean, Sd) UCL	12.43

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.93	Mean	8.43
Maximum	8.98	Median	8.305
SD	0.438	Std. Error of Mean	0.179
Coefficient of Variation	0.0519	Skewness	0.478
Mean of logged Data	2.131	SD of logged Data	0.0516

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.79	95% Adjusted-CLT UCL (Chen-1995)	8.761
		95% Modified-t UCL (Johnson-1978)	8.796

Nonparametric Distribution Free UCLs

95% CLT UCL	8.724	95% Jackknife UCL	8.79
95% Standard Bootstrap UCL	8.697	95% Bootstrap-t UCL	9.083
95% Hall's Bootstrap UCL	9.148	95% Percentile Bootstrap UCL	8.695
95% BCA Bootstrap UCL	8.708		
90% Chebyshev(Mean, Sd) UCL	8.966	95% Chebyshev(Mean, Sd) UCL	9.209
97.5% Chebyshev(Mean, Sd) UCL	9.546	99% Chebyshev(Mean, Sd) UCL	10.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	35.1	Mean	37.05
Maximum	39.8	Median	36.5
SD	1.819	Std. Error of Mean	0.742
Coefficient of Variation	0.0491	Skewness	0.751
Mean of logged Data	3.611	SD of logged Data	0.0485

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.55	95% Adjusted-CLT UCL (Chen-1995)	38.51
		95% Modified-t UCL (Johnson-1978)	38.58

Nonparametric Distribution Free UCLs

95% CLT UCL	38.27	95% Jackknife UCL	38.55
95% Standard Bootstrap UCL	38.19	95% Bootstrap-t UCL	40.41
95% Hall's Bootstrap UCL	50.21	95% Percentile Bootstrap UCL	38.17
95% BCA Bootstrap UCL	38.27		
90% Chebyshev(Mean, Sd) UCL	39.28	95% Chebyshev(Mean, Sd) UCL	40.29
97.5% Chebyshev(Mean, Sd) UCL	41.69	99% Chebyshev(Mean, Sd) UCL	44.44

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.8	Mean	1.93
Maximum	1.99	Median	1.95
SD	0.0743	Std. Error of Mean	0.0303
Coefficient of Variation	0.0385	Skewness	-1.22
Mean of logged Data	0.657	SD of logged Data	0.0391

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.991	95% Adjusted-CLT UCL (Chen-1995)	1.964
		95% Modified-t UCL (Johnson-1978)	1.989

Nonparametric Distribution Free UCLs

95% CLT UCL	1.98	95% Jackknife UCL	1.991
95% Standard Bootstrap UCL	1.976	95% Bootstrap-t UCL	1.975
95% Hall's Bootstrap UCL	1.966	95% Percentile Bootstrap UCL	1.973
95% BCA Bootstrap UCL	1.963		
90% Chebyshev(Mean, Sd) UCL	2.021	95% Chebyshev(Mean, Sd) UCL	2.062
97.5% Chebyshev(Mean, Sd) UCL	2.119	99% Chebyshev(Mean, Sd) UCL	2.232

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.48	Mean	0.515
Maximum	0.53	Median	0.52
SD	0.0199	Std. Error of Mean	0.00813
Coefficient of Variation	0.0387	Skewness	-1.303
Mean of logged Data	-0.664	SD of logged Data	0.0394

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.531	95% Adjusted-CLT UCL (Chen-1995)	0.524
		95% Modified-t UCL (Johnson-1978)	0.531

Nonparametric Distribution Free UCLs

95% CLT UCL	0.528	95% Jackknife UCL	0.531
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.539	95% Chebyshev(Mean, Sd) UCL	0.55
97.5% Chebyshev(Mean, Sd) UCL	0.566	99% Chebyshev(Mean, Sd) UCL	0.596

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.945	Mean	2.091
Maximum	2.16	Median	2.115
SD	0.0826	Std. Error of Mean	0.0337
Coefficient of Variation	0.0395	Skewness	-1.27
Mean of logged Data	0.737	SD of logged Data	0.0402

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.159	95% Adjusted-CLT UCL (Chen-1995)	2.128
		95% Modified-t UCL (Johnson-1978)	2.156

Nonparametric Distribution Free UCLs

95% CLT UCL	2.146	95% Jackknife UCL	2.159
95% Standard Bootstrap UCL	2.141	95% Bootstrap-t UCL	2.143
95% Hall's Bootstrap UCL	2.13	95% Percentile Bootstrap UCL	2.138
95% BCA Bootstrap UCL	2.128		
90% Chebyshev(Mean, Sd) UCL	2.192	95% Chebyshev(Mean, Sd) UCL	2.238
97.5% Chebyshev(Mean, Sd) UCL	2.301	99% Chebyshev(Mean, Sd) UCL	2.426

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.81	Mean	2.041
Maximum	2.15	Median	2.095
SD	0.138	Std. Error of Mean	0.0562
Coefficient of Variation	0.0674	Skewness	-1.136
Mean of logged Data	0.711	SD of logged Data	0.0693

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.154	95% Adjusted-CLT UCL (Chen-1995)	2.105
		95% Modified-t UCL (Johnson-1978)	2.15

Nonparametric Distribution Free UCLs

95% CLT UCL	2.133	95% Jackknife UCL	2.154
95% Standard Bootstrap UCL	2.126	95% Bootstrap-t UCL	2.13
95% Hall's Bootstrap UCL	2.102	95% Percentile Bootstrap UCL	2.117
95% BCA Bootstrap UCL	2.109		
90% Chebyshev(Mean, Sd) UCL	2.209	95% Chebyshev(Mean, Sd) UCL	2.286
97.5% Chebyshev(Mean, Sd) UCL	2.392	99% Chebyshev(Mean, Sd) UCL	2.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.6	Mean	1.939
Maximum	2.15	Median	2.003
SD	0.222	Std. Error of Mean	0.0906

Coefficient of Variation	0.114	Skewness	-0.76
Mean of logged Data	0.657	SD of logged Data	0.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.122	95% Adjusted-CLT UCL (Chen-1995)	2.058
		95% Modified-t UCL (Johnson-1978)	2.117

Nonparametric Distribution Free UCLs

95% CLT UCL	2.088	95% Jackknife UCL	2.122
95% Standard Bootstrap UCL	2.074	95% Bootstrap-t UCL	2.085
95% Hall's Bootstrap UCL	2.041	95% Percentile Bootstrap UCL	2.075
95% BCA Bootstrap UCL	2.056		
90% Chebyshev(Mean, Sd) UCL	2.211	95% Chebyshev(Mean, Sd) UCL	2.334
97.5% Chebyshev(Mean, Sd) UCL	2.505	99% Chebyshev(Mean, Sd) UCL	2.841

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.995	Mean	3.369
Maximum	4.14	Median	3.243
SD	0.404	Std. Error of Mean	0.165
Coefficient of Variation	0.12	Skewness	1.786
Mean of logged Data	1.209	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.701	95% Adjusted-CLT UCL (Chen-1995)	3.769
		95% Modified-t UCL (Johnson-1978)	3.721

Nonparametric Distribution Free UCLs

95% CLT UCL	3.64	95% Jackknife UCL	3.701
95% Standard Bootstrap UCL	3.615	95% Bootstrap-t UCL	4.137
95% Hall's Bootstrap UCL	5.012	95% Percentile Bootstrap UCL	3.649

95% BCA Bootstrap UCL	3.701		
90% Chebyshev(Mean, Sd) UCL	3.863	95% Chebyshev(Mean, Sd) UCL	4.087
97.5% Chebyshev(Mean, Sd) UCL	4.398	99% Chebyshev(Mean, Sd) UCL	5.009

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.995	Mean	3.218
Maximum	3.32	Median	3.253
SD	0.125	Std. Error of Mean	0.0511
Coefficient of Variation	0.0389	Skewness	-1.309
Mean of logged Data	1.168	SD of logged Data	0.0396

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.32	95% Adjusted-CLT UCL (Chen-1995)	3.272
		95% Modified-t UCL (Johnson-1978)	3.316

Nonparametric Distribution Free UCLs

95% CLT UCL	3.302	95% Jackknife UCL	3.32
95% Standard Bootstrap UCL	3.292	95% Bootstrap-t UCL	3.291
95% Hall's Bootstrap UCL	3.278	95% Percentile Bootstrap UCL	3.292
95% BCA Bootstrap UCL	3.276		
90% Chebyshev(Mean, Sd) UCL	3.371	95% Chebyshev(Mean, Sd) UCL	3.44
97.5% Chebyshev(Mean, Sd) UCL	3.537	99% Chebyshev(Mean, Sd) UCL	3.726

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.945	Mean	2.091

Maximum	2.16	Median	2.115
SD	0.0826	Std. Error of Mean	0.0337
Coefficient of Variation	0.0395	Skewness	-1.27
Mean of logged Data	0.737	SD of logged Data	0.0402

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.159	95% Adjusted-CLT UCL (Chen-1995)	2.128
		95% Modified-t UCL (Johnson-1978)	2.156

Nonparametric Distribution Free UCLs

95% CLT UCL	2.146	95% Jackknife UCL	2.159
95% Standard Bootstrap UCL	2.141	95% Bootstrap-t UCL	2.143
95% Hall's Bootstrap UCL	2.131	95% Percentile Bootstrap UCL	2.14
95% BCA Bootstrap UCL	2.128		
90% Chebyshev(Mean, Sd) UCL	2.192	95% Chebyshev(Mean, Sd) UCL	2.238
97.5% Chebyshev(Mean, Sd) UCL	2.301	99% Chebyshev(Mean, Sd) UCL	2.426

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.945	Mean	2.494
Maximum	3.05	Median	2.545
SD	0.446	Std. Error of Mean	0.182
Coefficient of Variation	0.179	Skewness	-0.0949
Mean of logged Data	0.9	SD of logged Data	0.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.861	95% Adjusted-CLT UCL (Chen-1995)	2.786
		95% Modified-t UCL (Johnson-1978)	2.86

Nonparametric Distribution Free UCLs

95% CLT UCL	2.794	95% Jackknife UCL	2.861

95% Standard Bootstrap UCL	2.772	95% Bootstrap-t UCL	2.879
95% Hall's Bootstrap UCL	2.719	95% Percentile Bootstrap UCL	2.766
95% BCA Bootstrap UCL	2.778		
90% Chebyshev(Mean, Sd) UCL	3.04	95% Chebyshev(Mean, Sd) UCL	3.288
97.5% Chebyshev(Mean, Sd) UCL	3.631	99% Chebyshev(Mean, Sd) UCL	4.306

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.995	Mean	3.218
Maximum	3.32	Median	3.253
SD	0.125	Std. Error of Mean	0.0511
Coefficient of Variation	0.0389	Skewness	-1.309
Mean of logged Data	1.168	SD of logged Data	0.0396

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.32	95% Adjusted-CLT UCL (Chen-1995)	3.272
		95% Modified-t UCL (Johnson-1978)	3.316

Nonparametric Distribution Free UCLs

95% CLT UCL	3.302	95% Jackknife UCL	3.32
95% Standard Bootstrap UCL	3.294	95% Bootstrap-t UCL	3.295
95% Hall's Bootstrap UCL	3.278	95% Percentile Bootstrap UCL	3.291
95% BCA Bootstrap UCL	3.273		
90% Chebyshev(Mean, Sd) UCL	3.371	95% Chebyshev(Mean, Sd) UCL	3.44
97.5% Chebyshev(Mean, Sd) UCL	3.537	99% Chebyshev(Mean, Sd) UCL	3.726

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.945	Mean	2.903
Maximum	4.73	Median	2.305
SD	1.162	Std. Error of Mean	0.474
Coefficient of Variation	0.4	Skewness	1.06
Mean of logged Data	1.005	SD of logged Data	0.37

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.858	95% Adjusted-CLT UCL (Chen-1995)	3.902
		95% Modified-t UCL (Johnson-1978)	3.892

Nonparametric Distribution Free UCLs

95% CLT UCL	3.682	95% Jackknife UCL	3.858
95% Standard Bootstrap UCL	3.619	95% Bootstrap-t UCL	7.492
95% Hall's Bootstrap UCL	10.16	95% Percentile Bootstrap UCL	3.62
95% BCA Bootstrap UCL	3.766		
90% Chebyshev(Mean, Sd) UCL	4.325	95% Chebyshev(Mean, Sd) UCL	4.969
97.5% Chebyshev(Mean, Sd) UCL	5.864	99% Chebyshev(Mean, Sd) UCL	7.621

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.2	Mean	1.288
Maximum	1.33	Median	1.303
SD	0.0503	Std. Error of Mean	0.0205
Coefficient of Variation	0.039	Skewness	-1.24
Mean of logged Data	0.253	SD of logged Data	0.0397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.33	95% Adjusted-CLT UCL (Chen-1995)	1.311
		95% Modified-t UCL (Johnson-1978)	1.328

Nonparametric Distribution Free UCLs

95% CLT UCL	1.322	95% Jackknife UCL	1.33
95% Standard Bootstrap UCL	1.319	95% Bootstrap-t UCL	1.318
95% Hall's Bootstrap UCL	1.313	95% Percentile Bootstrap UCL	1.318
95% BCA Bootstrap UCL	1.311		
90% Chebyshev(Mean, Sd) UCL	1.35	95% Chebyshev(Mean, Sd) UCL	1.378
97.5% Chebyshev(Mean, Sd) UCL	1.416	99% Chebyshev(Mean, Sd) UCL	1.493

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.175	Mean	3.717
Maximum	5.99	Median	3.308
SD	1.115	Std. Error of Mean	0.455
Coefficient of Variation	0.3	Skewness	2.433
Mean of logged Data	1.283	SD of logged Data	0.249

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.634	95% Adjusted-CLT UCL (Chen-1995)	4.949
		95% Modified-t UCL (Johnson-1978)	4.71

Nonparametric Distribution Free UCLs

95% CLT UCL	4.466	95% Jackknife UCL	4.634
95% Standard Bootstrap UCL	4.393	95% Bootstrap-t UCL	13.93
95% Hall's Bootstrap UCL	15.01	95% Percentile Bootstrap UCL	4.613
95% BCA Bootstrap UCL	4.652		
90% Chebyshev(Mean, Sd) UCL	5.083	95% Chebyshev(Mean, Sd) UCL	5.702
97.5% Chebyshev(Mean, Sd) UCL	6.56	99% Chebyshev(Mean, Sd) UCL	8.247

Suggested UCL to Use

95% Student's-t UCL	4.634	or 95% Modified-t UCL	4.71

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.9	Mean	1.975
Maximum	5.64	Median	1.175
SD	1.842	Std. Error of Mean	0.752
Coefficient of Variation	0.933	Skewness	2.196
Mean of logged Data	0.429	SD of logged Data	0.703

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.49	95% Adjusted-CLT UCL (Chen-1995)	3.933
		95% Modified-t UCL (Johnson-1978)	3.603

Nonparametric Distribution Free UCLs

95% CLT UCL	3.212	95% Jackknife UCL	3.49
95% Standard Bootstrap UCL	3.087	95% Bootstrap-t UCL	10.82
95% Hall's Bootstrap UCL	10.66	95% Percentile Bootstrap UCL	3.31
95% BCA Bootstrap UCL	4.06		
90% Chebyshev(Mean, Sd) UCL	4.231	95% Chebyshev(Mean, Sd) UCL	5.253
97.5% Chebyshev(Mean, Sd) UCL	6.672	99% Chebyshev(Mean, Sd) UCL	9.458

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.995	Mean	3.218
Maximum	3.32	Median	3.253
SD	0.125	Std. Error of Mean	0.0511
Coefficient of Variation	0.0389	Skewness	-1.309
Mean of logged Data	1.168	SD of logged Data	0.0396

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.32	95% Adjusted-CLT UCL (Chen-1995)	3.272
		95% Modified-t UCL (Johnson-1978)	3.316

Nonparametric Distribution Free UCLs

95% CLT UCL	3.302	95% Jackknife UCL	3.32
95% Standard Bootstrap UCL	3.296	95% Bootstrap-t UCL	3.294
95% Hall's Bootstrap UCL	3.277	95% Percentile Bootstrap UCL	3.292
95% BCA Bootstrap UCL	3.276		
90% Chebyshev(Mean, Sd) UCL	3.371	95% Chebyshev(Mean, Sd) UCL	3.44
97.5% Chebyshev(Mean, Sd) UCL	3.537	99% Chebyshev(Mean, Sd) UCL	3.726

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.995	Mean	3.419
Maximum	4.11	Median	3.308
SD	0.395	Std. Error of Mean	0.161
Coefficient of Variation	0.116	Skewness	1.184
Mean of logged Data	1.224	SD of logged Data	0.112

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.745	95% Adjusted-CLT UCL (Chen-1995)	3.768
		95% Modified-t UCL (Johnson-1978)	3.758

Nonparametric Distribution Free UCLs

95% CLT UCL	3.685	95% Jackknife UCL	3.745
95% Standard Bootstrap UCL	3.66	95% Bootstrap-t UCL	4.071
95% Hall's Bootstrap UCL	5.607	95% Percentile Bootstrap UCL	3.679
95% BCA Bootstrap UCL	3.731		
90% Chebyshev(Mean, Sd) UCL	3.904	95% Chebyshev(Mean, Sd) UCL	4.123
97.5% Chebyshev(Mean, Sd) UCL	4.427	99% Chebyshev(Mean, Sd) UCL	5.026

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:15:13 AM
From File	40005K.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.85	Mean	12.34
Maximum	14.4	Median	12.85
SD	1.971	Std. Error of Mean	0.805
Coefficient of Variation	0.16	Skewness	-0.404
Mean of logged Data	2.502	SD of logged Data	0.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.96	95% Adjusted-CLT UCL (Chen-1995)	13.52
		95% Modified-t UCL (Johnson-1978)	13.94

Nonparametric Distribution Free UCLs

95% CLT UCL	13.67	95% Jackknife UCL	13.96
95% Standard Bootstrap UCL	13.56	95% Bootstrap-t UCL	13.7
95% Hall's Bootstrap UCL	13.22	95% Percentile Bootstrap UCL	13.48
95% BCA Bootstrap UCL	13.45		
90% Chebyshev(Mean, Sd) UCL	14.76	95% Chebyshev(Mean, Sd) UCL	15.85
97.5% Chebyshev(Mean, Sd) UCL	17.37	99% Chebyshev(Mean, Sd) UCL	20.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.66	Mean	10.35
Maximum	11.7	Median	10.25
SD	0.742	Std. Error of Mean	0.303
Coefficient of Variation	0.0718	Skewness	1.401

Mean of logged Data	2.334	SD of logged Data	0.0697

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.96	95% Adjusted-CLT UCL (Chen-1995)	11.03
		95% Modified-t UCL (Johnson-1978)	10.98

Nonparametric Distribution Free UCLs

95% CLT UCL	10.84	95% Jackknife UCL	10.96
95% Standard Bootstrap UCL	10.8	95% Bootstrap-t UCL	11.29
95% Hall's Bootstrap UCL	13.3	95% Percentile Bootstrap UCL	10.83
95% BCA Bootstrap UCL	11.02		
90% Chebyshev(Mean, Sd) UCL	11.25	95% Chebyshev(Mean, Sd) UCL	11.67
97.5% Chebyshev(Mean, Sd) UCL	12.24	99% Chebyshev(Mean, Sd) UCL	13.36

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	38.2	Mean	44.28
Maximum	47.8	Median	46.05
SD	4.149	Std. Error of Mean	1.694
Coefficient of Variation	0.0937	Skewness	-0.868
Mean of logged Data	3.787	SD of logged Data	0.0967

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.7	95% Adjusted-CLT UCL (Chen-1995)	46.43
		95% Modified-t UCL (Johnson-1978)	47.6

Nonparametric Distribution Free UCLs

95% CLT UCL	47.07	95% Jackknife UCL	47.7
95% Standard Bootstrap UCL	46.8	95% Bootstrap-t UCL	46.96
95% Hall's Bootstrap UCL	46.04	95% Percentile Bootstrap UCL	46.82
95% BCA Bootstrap UCL	46.48		
90% Chebyshev(Mean, Sd) UCL	49.37	95% Chebyshev(Mean, Sd) UCL	51.67
97.5% Chebyshev(Mean, Sd) UCL	54.86	99% Chebyshev(Mean, Sd) UCL	61.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.36	Mean	9.028
Maximum	45	Median	1.94
SD	17.62	Std. Error of Mean	7.195
Coefficient of Variation	1.952	Skewness	2.448
Mean of logged Data	1.132	SD of logged Data	1.318

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.53	95% Adjusted-CLT UCL (Chen-1995)	28.55
		95% Modified-t UCL (Johnson-1978)	24.73

Nonparametric Distribution Free UCLs

95% CLT UCL	20.86	95% Jackknife UCL	23.53
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	30.61	95% Chebyshev(Mean, Sd) UCL	40.39
97.5% Chebyshev(Mean, Sd) UCL	53.96	99% Chebyshev(Mean, Sd) UCL	80.62

Suggested UCL to Use

Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.51	Mean	2.165
Maximum	10.4	Median	0.518
SD	4.034	Std. Error of Mean	1.647
Coefficient of Variation	1.863	Skewness	2.449
Mean of logged Data	-0.158	SD of logged Data	1.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.484	95% Adjusted-CLT UCL (Chen-1995)	6.634
		95% Modified-t UCL (Johnson-1978)	5.758

Nonparametric Distribution Free UCLs

95% CLT UCL	4.874	95% Jackknife UCL	5.484
95% Standard Bootstrap UCL	4.681	95% Bootstrap-t UCL	1770
95% Hall's Bootstrap UCL	851.4	95% Percentile Bootstrap UCL	5.458
95% BCA Bootstrap UCL	5.462		
90% Chebyshev(Mean, Sd) UCL	7.106	95% Chebyshev(Mean, Sd) UCL	9.344
97.5% Chebyshev(Mean, Sd) UCL	12.45	99% Chebyshev(Mean, Sd) UCL	18.55

Suggested UCL to Use

95% Hall's Bootstrap UCL 851.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.08	Mean	4.29
Maximum	15.2	Median	2.103
SD	5.345	Std. Error of Mean	2.182
Coefficient of Variation	1.246	Skewness	2.449
Mean of logged Data	1.075	SD of logged Data	0.807

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.687	95% Adjusted-CLT UCL (Chen-1995)	10.21
		95% Modified-t UCL (Johnson-1978)	9.051

Nonparametric Distribution Free UCLs

95% CLT UCL	7.879	95% Jackknife UCL	8.687
95% Standard Bootstrap UCL	7.47	95% Bootstrap-t UCL	1141
95% Hall's Bootstrap UCL	571.7	95% Percentile Bootstrap UCL	8.648
95% BCA Bootstrap UCL	8.66		

90% Chebyshev(Mean, Sd) UCL	10.84	95% Chebyshev(Mean, Sd) UCL	13.8
97.5% Chebyshev(Mean, Sd) UCL	17.92	99% Chebyshev(Mean, Sd) UCL	26

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.68	Mean	36.7
Maximum	210	Median	2.09
SD	84.9	Std. Error of Mean	34.66
Coefficient of Variation	2.314	Skewness	2.449
Mean of logged Data	1.476	SD of logged Data	1.9

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	106.5	95% Adjusted-CLT UCL (Chen-1995)	130.7
		95% Modified-t UCL (Johnson-1978)	112.3

Nonparametric Distribution Free UCLs

95% CLT UCL	93.71	95% Jackknife UCL	106.5
95% Standard Bootstrap UCL	87.82	95% Bootstrap-t UCL	17256
95% Hall's Bootstrap UCL	8817	95% Percentile Bootstrap UCL	106
95% BCA Bootstrap UCL	106.2		
90% Chebyshev(Mean, Sd) UCL	140.7	95% Chebyshev(Mean, Sd) UCL	187.8
97.5% Chebyshev(Mean, Sd) UCL	253.2	99% Chebyshev(Mean, Sd) UCL	381.6

Suggested UCL to Use

95% Hall's Bootstrap UCL	8817

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2	Mean	2.09

Maximum	2.155	Median	2.1
SD	0.0507	Std. Error of Mean	0.0207
Coefficient of Variation	0.0243	Skewness	-1.036
Mean of logged Data	0.737	SD of logged Data	0.0245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.132	95% Adjusted-CLT UCL (Chen-1995)	2.115
		95% Modified-t UCL (Johnson-1978)	2.13

Nonparametric Distribution Free UCLs

95% CLT UCL	2.124	95% Jackknife UCL	2.132
95% Standard Bootstrap UCL	2.121	95% Bootstrap-t UCL	2.121
95% Hall's Bootstrap UCL	2.118	95% Percentile Bootstrap UCL	2.119
95% BCA Bootstrap UCL	2.112		
90% Chebyshev(Mean, Sd) UCL	2.152	95% Chebyshev(Mean, Sd) UCL	2.18
97.5% Chebyshev(Mean, Sd) UCL	2.219	99% Chebyshev(Mean, Sd) UCL	2.296

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.075	Mean	3.598
Maximum	4.84	Median	3.23
SD	0.695	Std. Error of Mean	0.284
Coefficient of Variation	0.193	Skewness	1.505
Mean of logged Data	1.266	SD of logged Data	0.179

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.169	95% Adjusted-CLT UCL (Chen-1995)	4.25
		95% Modified-t UCL (Johnson-1978)	4.198

Nonparametric Distribution Free UCLs

95% CLT UCL	4.064	95% Jackknife UCL	4.169

95% Standard Bootstrap UCL	4.023	95% Bootstrap-t UCL	8.063
95% Hall's Bootstrap UCL	9.266	95% Percentile Bootstrap UCL	4.035
95% BCA Bootstrap UCL	4.155		
90% Chebyshev(Mean, Sd) UCL	4.449	95% Chebyshev(Mean, Sd) UCL	4.834
97.5% Chebyshev(Mean, Sd) UCL	5.369	99% Chebyshev(Mean, Sd) UCL	6.421

Suggested UCL to Use

95% Student's-t UCL	4.169	or 95% Modified-t UCL	4.198

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.075	Mean	3.214
Maximum	3.315	Median	3.23
SD	0.0783	Std. Error of Mean	0.032
Coefficient of Variation	0.0244	Skewness	-1.034
Mean of logged Data	1.167	SD of logged Data	0.0246

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.279	95% Adjusted-CLT UCL (Chen-1995)	3.252
		95% Modified-t UCL (Johnson-1978)	3.276

Nonparametric Distribution Free UCLs

95% CLT UCL	3.267	95% Jackknife UCL	3.279
95% Standard Bootstrap UCL	3.262	95% Bootstrap-t UCL	3.263
95% Hall's Bootstrap UCL	3.258	95% Percentile Bootstrap UCL	3.259
95% BCA Bootstrap UCL	3.253		
90% Chebyshev(Mean, Sd) UCL	3.31	95% Chebyshev(Mean, Sd) UCL	3.354
97.5% Chebyshev(Mean, Sd) UCL	3.414	99% Chebyshev(Mean, Sd) UCL	3.532

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5

		Number of Missing Observations	0
Minimum	2	Mean	2.465
Maximum	4.21	Median	2.1
SD	0.861	Std. Error of Mean	0.351
Coefficient of Variation	0.349	Skewness	2.379
Mean of logged Data	0.863	SD of logged Data	0.285

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.173	95% Adjusted-CLT UCL (Chen-1995)	3.407
		95% Modified-t UCL (Johnson-1978)	3.23

Nonparametric Distribution Free UCLs

95% CLT UCL	3.043	95% Jackknife UCL	3.173
95% Standard Bootstrap UCL	2.993	95% Bootstrap-t UCL	9.829
95% Hall's Bootstrap UCL	8.607	95% Percentile Bootstrap UCL	3.135
95% BCA Bootstrap UCL	3.222		
90% Chebyshev(Mean, Sd) UCL	3.519	95% Chebyshev(Mean, Sd) UCL	3.996
97.5% Chebyshev(Mean, Sd) UCL	4.659	99% Chebyshev(Mean, Sd) UCL	5.961

Suggested UCL to Use

95% Student's-t UCL	3.173	or 95% Modified-t UCL	3.23

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.08	Mean	3.065
Maximum	4.88	Median	2.705
SD	1.176	Std. Error of Mean	0.48
Coefficient of Variation	0.384	Skewness	0.713
Mean of logged Data	1.061	SD of logged Data	0.374

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.033	95% Adjusted-CLT UCL (Chen-1995)	4.004
		95% Modified-t UCL (Johnson-1978)	4.056

Nonparametric Distribution Free UCLs

95% CLT UCL	3.855	95% Jackknife UCL	4.033
95% Standard Bootstrap UCL	3.789	95% Bootstrap-t UCL	4.126

95% Hall's Bootstrap UCL	3.846	95% Percentile Bootstrap UCL	3.793
95% BCA Bootstrap UCL	3.893		
90% Chebyshev(Mean, Sd) UCL	4.506	95% Chebyshev(Mean, Sd) UCL	5.158
97.5% Chebyshev(Mean, Sd) UCL	6.064	99% Chebyshev(Mean, Sd) UCL	7.843

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.075	Mean	3.214
Maximum	3.315	Median	3.23
SD	0.0783	Std. Error of Mean	0.032
Coefficient of Variation	0.0244	Skewness	-1.034
Mean of logged Data	1.167	SD of logged Data	0.0246

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.279	95% Adjusted-CLT UCL (Chen-1995)	3.252
		95% Modified-t UCL (Johnson-1978)	3.276

Nonparametric Distribution Free UCLs

95% CLT UCL	3.267	95% Jackknife UCL	3.279
95% Standard Bootstrap UCL	3.262	95% Bootstrap-t UCL	3.262
95% Hall's Bootstrap UCL	3.259	95% Percentile Bootstrap UCL	3.26
95% BCA Bootstrap UCL	3.249		
90% Chebyshev(Mean, Sd) UCL	3.31	95% Chebyshev(Mean, Sd) UCL	3.354
97.5% Chebyshev(Mean, Sd) UCL	3.414	99% Chebyshev(Mean, Sd) UCL	3.532

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0

Minimum	2.08	Mean	2.863
Maximum	4.45	Median	2.103
SD	1.188	Std. Error of Mean	0.485
Coefficient of Variation	0.415	Skewness	0.972
Mean of logged Data	0.987	SD of logged Data	0.382

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.839	95% Adjusted-CLT UCL (Chen-1995)	3.866
		95% Modified-t UCL (Johnson-1978)	3.872

Nonparametric Distribution Free UCLs

95% CLT UCL	3.66	95% Jackknife UCL	3.839
95% Standard Bootstrap UCL	3.587	95% Bootstrap-t UCL	91.31
95% Hall's Bootstrap UCL	84	95% Percentile Bootstrap UCL	3.645
95% BCA Bootstrap UCL	3.631		
90% Chebyshev(Mean, Sd) UCL	4.317	95% Chebyshev(Mean, Sd) UCL	4.976
97.5% Chebyshev(Mean, Sd) UCL	5.89	99% Chebyshev(Mean, Sd) UCL	7.687

Suggested UCL to Use

95% Student's-t UCL	3.839	or 95% Modified-t UCL	3.872

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.28	Mean	2.83
Maximum	10.5	Median	1.293
SD	3.758	Std. Error of Mean	1.534
Coefficient of Variation	1.328	Skewness	2.449
Mean of logged Data	0.608	SD of logged Data	0.854

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.921	95% Adjusted-CLT UCL (Chen-1995)	6.992
		95% Modified-t UCL (Johnson-1978)	6.177

Nonparametric Distribution Free UCLs

95% CLT UCL	5.353	95% Jackknife UCL	5.921
95% Standard Bootstrap UCL	5.114	95% Bootstrap-t UCL	949.3
95% Hall's Bootstrap UCL	406.3	95% Percentile Bootstrap UCL	5.895

95% BCA Bootstrap UCL	5.908		
90% Chebyshev(Mean, Sd) UCL	7.432	95% Chebyshev(Mean, Sd) UCL	9.517
97.5% Chebyshev(Mean, Sd) UCL	12.41	99% Chebyshev(Mean, Sd) UCL	18.09

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 9.517

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.92	Mean	3.148
Maximum	3.235	Median	3.215
SD	0.127	Std. Error of Mean	0.052
Coefficient of Variation	0.0404	Skewness	-1.515
Mean of logged Data	1.146	SD of logged Data	0.0413

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.253	95% Adjusted-CLT UCL (Chen-1995)	3.199
		95% Modified-t UCL (Johnson-1978)	3.248

Nonparametric Distribution Free UCLs

95% CLT UCL	3.234	95% Jackknife UCL	3.253
95% Standard Bootstrap UCL	3.227	95% Bootstrap-t UCL	3.224
95% Hall's Bootstrap UCL	3.203	95% Percentile Bootstrap UCL	3.222
95% BCA Bootstrap UCL	3.205		
90% Chebyshev(Mean, Sd) UCL	3.304	95% Chebyshev(Mean, Sd) UCL	3.375
97.5% Chebyshev(Mean, Sd) UCL	3.473	99% Chebyshev(Mean, Sd) UCL	3.665

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.97	Mean	132.7

Maximum	780	Median	2.385
SD	317.1	Std. Error of Mean	129.5
Coefficient of Variation	2.39	Skewness	2.449
Mean of logged Data	1.764	SD of logged Data	2.541

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	393.6	95% Adjusted-CLT UCL (Chen-1995)	484
		95% Modified-t UCL (Johnson-1978)	415.2

Nonparametric Distribution Free UCLs

95% CLT UCL	345.7	95% Jackknife UCL	393.6
95% Standard Bootstrap UCL	330.6	95% Bootstrap-t UCL	55416
95% Hall's Bootstrap UCL	24117	95% Percentile Bootstrap UCL	390.8
95% BCA Bootstrap UCL	393.4		
90% Chebyshev(Mean, Sd) UCL	521.1	95% Chebyshev(Mean, Sd) UCL	697
97.5% Chebyshev(Mean, Sd) UCL	941.2	99% Chebyshev(Mean, Sd) UCL	1421

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.2	Mean	10.47
Maximum	46.6	Median	3.233
SD	17.7	Std. Error of Mean	7.226
Coefficient of Variation	1.691	Skewness	2.449
Mean of logged Data	1.62	SD of logged Data	1.088

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.03	95% Adjusted-CLT UCL (Chen-1995)	30.08
		95% Modified-t UCL (Johnson-1978)	26.23

Nonparametric Distribution Free UCLs

95% CLT UCL	22.35	95% Jackknife UCL	25.03
95% Standard Bootstrap UCL	21.61	95% Bootstrap-t UCL	8304
95% Hall's Bootstrap UCL	4122	95% Percentile Bootstrap UCL	24.91
95% BCA Bootstrap UCL	32.14		

90% Chebyshev(Mean, Sd) UCL	32.15	95% Chebyshev(Mean, Sd) UCL	41.97
97.5% Chebyshev(Mean, Sd) UCL	55.6	99% Chebyshev(Mean, Sd) UCL	82.37

Suggested UCL to Use

95% Hall's Bootstrap UCL 4122

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.2	Mean	3.593
Maximum	4.51	Median	3.305
SD	0.544	Std. Error of Mean	0.222
Coefficient of Variation	0.151	Skewness	1.262
Mean of logged Data	1.27	SD of logged Data	0.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.041	95% Adjusted-CLT UCL (Chen-1995)	4.081
		95% Modified-t UCL (Johnson-1978)	4.06

Nonparametric Distribution Free UCLs

95% CLT UCL	3.958	95% Jackknife UCL	4.041
95% Standard Bootstrap UCL	3.929	95% Bootstrap-t UCL	5.7
95% Hall's Bootstrap UCL	6.858	95% Percentile Bootstrap UCL	3.995
95% BCA Bootstrap UCL	4.025		
90% Chebyshev(Mean, Sd) UCL	4.259	95% Chebyshev(Mean, Sd) UCL	4.561
97.5% Chebyshev(Mean, Sd) UCL	4.98	99% Chebyshev(Mean, Sd) UCL	5.802

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:20:57 AM
From File	40005L.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.6	Mean	11.8
Maximum	13.2	Median	11.8
SD	0.947	Std. Error of Mean	0.386
Coefficient of Variation	0.0802	Skewness	0.255
Mean of logged Data	2.465	SD of logged Data	0.08

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.58	95% Adjusted-CLT UCL (Chen-1995)	12.48
		95% Modified-t UCL (Johnson-1978)	12.59

Nonparametric Distribution Free UCLs

95% CLT UCL	12.44	95% Jackknife UCL	12.58
95% Standard Bootstrap UCL	12.37	95% Bootstrap-t UCL	12.66
95% Hall's Bootstrap UCL	12.57	95% Percentile Bootstrap UCL	12.4
95% BCA Bootstrap UCL	12.4		
90% Chebyshev(Mean, Sd) UCL	12.96	95% Chebyshev(Mean, Sd) UCL	13.48
97.5% Chebyshev(Mean, Sd) UCL	14.21	99% Chebyshev(Mean, Sd) UCL	15.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.1	Mean	12.62
Maximum	14.4	Median	12.9
SD	1.541	Std. Error of Mean	0.629
Coefficient of Variation	0.122	Skewness	-0.785
Mean of logged Data	2.528	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.88	95% Adjusted-CLT UCL (Chen-1995)	13.44
		95% Modified-t UCL (Johnson-1978)	13.85

Nonparametric Distribution Free UCLs

95% CLT UCL	13.65	95% Jackknife UCL	13.88
95% Standard Bootstrap UCL	13.58	95% Bootstrap-t UCL	13.6
95% Hall's Bootstrap UCL	13.42	95% Percentile Bootstrap UCL	13.52
95% BCA Bootstrap UCL	13.43		
90% Chebyshev(Mean, Sd) UCL	14.5	95% Chebyshev(Mean, Sd) UCL	15.36
97.5% Chebyshev(Mean, Sd) UCL	16.54	99% Chebyshev(Mean, Sd) UCL	18.87

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	42.2	Mean	47.17
Maximum	58.6	Median	45.3
SD	5.945	Std. Error of Mean	2.427
Coefficient of Variation	0.126	Skewness	1.864
Mean of logged Data	3.848	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.06	95% Adjusted-CLT UCL (Chen-1995)	53.13
		95% Modified-t UCL (Johnson-1978)	52.36

Nonparametric Distribution Free UCLs

95% CLT UCL	51.16	95% Jackknife UCL	52.06
95% Standard Bootstrap UCL	50.82	95% Bootstrap-t UCL	59.57
95% Hall's Bootstrap UCL	67.34	95% Percentile Bootstrap UCL	51
95% BCA Bootstrap UCL	52.33		
90% Chebyshev(Mean, Sd) UCL	54.45	95% Chebyshev(Mean, Sd) UCL	57.75
97.5% Chebyshev(Mean, Sd) UCL	62.32	99% Chebyshev(Mean, Sd) UCL	71.31

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.8	Mean	1.733
Maximum	2	Median	1.92
SD	0.464	Std. Error of Mean	0.189
Coefficient of Variation	0.267	Skewness	-2.307
Mean of logged Data	0.506	SD of logged Data	0.359

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.115	95% Adjusted-CLT UCL (Chen-1995)	1.854
		95% Modified-t UCL (Johnson-1978)	2.085

Nonparametric Distribution Free UCLs

95% CLT UCL	2.045	95% Jackknife UCL	2.115
95% Standard Bootstrap UCL	2.015	95% Bootstrap-t UCL	1.98
95% Hall's Bootstrap UCL	1.911	95% Percentile Bootstrap UCL	1.952
95% BCA Bootstrap UCL	1.928		
90% Chebyshev(Mean, Sd) UCL	2.301	95% Chebyshev(Mean, Sd) UCL	2.558
97.5% Chebyshev(Mean, Sd) UCL	2.915	99% Chebyshev(Mean, Sd) UCL	3.616

Suggested UCL to Use

95% Student's-t UCL	2.115	or 95% Modified-t UCL	2.085

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.473	Mean	0.505
Maximum	0.535	Median	0.51
SD	0.026	Std. Error of Mean	0.0106

Coefficient of Variation	0.0515	Skewness	-0.286
Mean of logged Data	-0.684	SD of logged Data	0.0519

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.526	95% Adjusted-CLT UCL (Chen-1995)	0.521
		95% Modified-t UCL (Johnson-1978)	0.526

Nonparametric Distribution Free UCLs

95% CLT UCL	0.522	95% Jackknife UCL	0.526
95% Standard Bootstrap UCL	0.521	95% Bootstrap-t UCL	0.526
95% Hall's Bootstrap UCL	0.517	95% Percentile Bootstrap UCL	0.52
95% BCA Bootstrap UCL	0.52		
90% Chebyshev(Mean, Sd) UCL	0.537	95% Chebyshev(Mean, Sd) UCL	0.551
97.5% Chebyshev(Mean, Sd) UCL	0.571	99% Chebyshev(Mean, Sd) UCL	0.611

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	2.051
Maximum	2.165	Median	2.075
SD	0.106	Std. Error of Mean	0.0432
Coefficient of Variation	0.0515	Skewness	-0.352
Mean of logged Data	0.717	SD of logged Data	0.0519

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.138	95% Adjusted-CLT UCL (Chen-1995)	2.115
		95% Modified-t UCL (Johnson-1978)	2.137

Nonparametric Distribution Free UCLs

95% CLT UCL	2.122	95% Jackknife UCL	2.138
95% Standard Bootstrap UCL	2.116	95% Bootstrap-t UCL	2.124
95% Hall's Bootstrap UCL	2.099	95% Percentile Bootstrap UCL	2.117

95% BCA Bootstrap UCL	2.109		
90% Chebyshev(Mean, Sd) UCL	2.18	95% Chebyshev(Mean, Sd) UCL	2.239
97.5% Chebyshev(Mean, Sd) UCL	2.32	99% Chebyshev(Mean, Sd) UCL	2.48

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	3.264
Maximum	5.13	Median	2.718
SD	1.421	Std. Error of Mean	0.58
Coefficient of Variation	0.435	Skewness	0.62
Mean of logged Data	1.106	SD of logged Data	0.426

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.433	95% Adjusted-CLT UCL (Chen-1995)	4.375
		95% Modified-t UCL (Johnson-1978)	4.458

Nonparametric Distribution Free UCLs

95% CLT UCL	4.219	95% Jackknife UCL	4.433
95% Standard Bootstrap UCL	4.139	95% Bootstrap-t UCL	5.08
95% Hall's Bootstrap UCL	4.716	95% Percentile Bootstrap UCL	4.196
95% BCA Bootstrap UCL	4.239		
90% Chebyshev(Mean, Sd) UCL	5.005	95% Chebyshev(Mean, Sd) UCL	5.793
97.5% Chebyshev(Mean, Sd) UCL	6.888	99% Chebyshev(Mean, Sd) UCL	9.038

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	3.416

Maximum	5.7	Median	2.783
SD	1.622	Std. Error of Mean	0.662
Coefficient of Variation	0.475	Skewness	0.684
Mean of logged Data	1.137	SD of logged Data	0.464

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.75	95% Adjusted-CLT UCL (Chen-1995)	4.703
		95% Modified-t UCL (Johnson-1978)	4.781

Nonparametric Distribution Free UCLs

95% CLT UCL	4.505	95% Jackknife UCL	4.75
95% Standard Bootstrap UCL	4.427	95% Bootstrap-t UCL	5.548
95% Hall's Bootstrap UCL	5.156	95% Percentile Bootstrap UCL	4.411
95% BCA Bootstrap UCL	4.55		
90% Chebyshev(Mean, Sd) UCL	5.402	95% Chebyshev(Mean, Sd) UCL	6.302
97.5% Chebyshev(Mean, Sd) UCL	7.551	99% Chebyshev(Mean, Sd) UCL	10

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.125	Mean	5.993
Maximum	9.52	Median	5.318
SD	3.119	Std. Error of Mean	1.273
Coefficient of Variation	0.52	Skewness	0.233
Mean of logged Data	1.668	SD of logged Data	0.549

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.559	95% Adjusted-CLT UCL (Chen-1995)	8.217
		95% Modified-t UCL (Johnson-1978)	8.58

Nonparametric Distribution Free UCLs

95% CLT UCL	8.088	95% Jackknife UCL	8.559
95% Standard Bootstrap UCL	7.911	95% Bootstrap-t UCL	9.864
95% Hall's Bootstrap UCL	7.114	95% Percentile Bootstrap UCL	8.034
95% BCA Bootstrap UCL	8.057		

90% Chebyshev(Mean, Sd) UCL	9.814	95% Chebyshev(Mean, Sd) UCL	11.54
97.5% Chebyshev(Mean, Sd) UCL	13.95	99% Chebyshev(Mean, Sd) UCL	18.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.85	Mean	3.492
Maximum	4.27	Median	3.298
SD	0.568	Std. Error of Mean	0.232
Coefficient of Variation	0.163	Skewness	0.619
Mean of logged Data	1.24	SD of logged Data	0.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.959	95% Adjusted-CLT UCL (Chen-1995)	3.936
		95% Modified-t UCL (Johnson-1978)	3.969

Nonparametric Distribution Free UCLs

95% CLT UCL	3.873	95% Jackknife UCL	3.959
95% Standard Bootstrap UCL	3.844	95% Bootstrap-t UCL	4.585
95% Hall's Bootstrap UCL	8.718	95% Percentile Bootstrap UCL	3.851
95% BCA Bootstrap UCL	3.865		
90% Chebyshev(Mean, Sd) UCL	4.187	95% Chebyshev(Mean, Sd) UCL	4.502
97.5% Chebyshev(Mean, Sd) UCL	4.94	99% Chebyshev(Mean, Sd) UCL	5.798

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	2.456
Maximum	3.25	Median	2.178
SD	0.521	Std. Error of Mean	0.213
Coefficient of Variation	0.212	Skewness	1.035
Mean of logged Data	0.881	SD of logged Data	0.201

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.884	95% Adjusted-CLT UCL (Chen-1995)	2.901
		95% Modified-t UCL (Johnson-1978)	2.899

Nonparametric Distribution Free UCLs

95% CLT UCL	2.805	95% Jackknife UCL	2.884
95% Standard Bootstrap UCL	2.774	95% Bootstrap-t UCL	5.154
95% Hall's Bootstrap UCL	7.438	95% Percentile Bootstrap UCL	2.795
95% BCA Bootstrap UCL	2.821		
90% Chebyshev(Mean, Sd) UCL	3.093	95% Chebyshev(Mean, Sd) UCL	3.382
97.5% Chebyshev(Mean, Sd) UCL	3.783	99% Chebyshev(Mean, Sd) UCL	4.57

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	4.361
Maximum	7.67	Median	3.575
SD	2.612	Std. Error of Mean	1.066
Coefficient of Variation	0.599	Skewness	0.413
Mean of logged Data	1.311	SD of logged Data	0.629

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.51	95% Adjusted-CLT UCL (Chen-1995)	6.307
		95% Modified-t UCL (Johnson-1978)	6.54

Nonparametric Distribution Free UCLs

95% CLT UCL	6.115	95% Jackknife UCL	6.51
95% Standard Bootstrap UCL	5.908	95% Bootstrap-t UCL	6.67
95% Hall's Bootstrap UCL	5.355	95% Percentile Bootstrap UCL	5.853
95% BCA Bootstrap UCL	6.02		
90% Chebyshev(Mean, Sd) UCL	7.56	95% Chebyshev(Mean, Sd) UCL	9.009
97.5% Chebyshev(Mean, Sd) UCL	11.02	99% Chebyshev(Mean, Sd) UCL	14.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.955	Mean	3.157
Maximum	3.335	Median	3.193
SD	0.162	Std. Error of Mean	0.0663
Coefficient of Variation	0.0514	Skewness	-0.34
Mean of logged Data	1.148	SD of logged Data	0.0518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.29	95% Adjusted-CLT UCL (Chen-1995)	3.256
		95% Modified-t UCL (Johnson-1978)	3.289

Nonparametric Distribution Free UCLs

95% CLT UCL	3.266	95% Jackknife UCL	3.29
95% Standard Bootstrap UCL	3.255	95% Bootstrap-t UCL	3.289
95% Hall's Bootstrap UCL	3.233	95% Percentile Bootstrap UCL	3.251
95% BCA Bootstrap UCL	3.247		
90% Chebyshev(Mean, Sd) UCL	3.356	95% Chebyshev(Mean, Sd) UCL	3.446
97.5% Chebyshev(Mean, Sd) UCL	3.571	99% Chebyshev(Mean, Sd) UCL	3.816

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	6.106
Maximum	10.9	Median	5.85
SD	3.809	Std. Error of Mean	1.555
Coefficient of Variation	0.624	Skewness	0.167
Mean of logged Data	1.606	SD of logged Data	0.737

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.239	95% Adjusted-CLT UCL (Chen-1995)	8.777
		95% Modified-t UCL (Johnson-1978)	9.257

Nonparametric Distribution Free UCLs

95% CLT UCL	8.663	95% Jackknife UCL	9.239
95% Standard Bootstrap UCL	8.319	95% Bootstrap-t UCL	9.049
95% Hall's Bootstrap UCL	8.743	95% Percentile Bootstrap UCL	8.413
95% BCA Bootstrap UCL	8.51		
90% Chebyshev(Mean, Sd) UCL	10.77	95% Chebyshev(Mean, Sd) UCL	12.88
97.5% Chebyshev(Mean, Sd) UCL	15.82	99% Chebyshev(Mean, Sd) UCL	21.58

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.18	Mean	1.263
Maximum	1.335	Median	1.278
SD	0.0664	Std. Error of Mean	0.0271
Coefficient of Variation	0.0526	Skewness	-0.351
Mean of logged Data	0.232	SD of logged Data	0.053

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.317	95% Adjusted-CLT UCL (Chen-1995)	1.303
		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.307	95% Jackknife UCL	1.317
95% Standard Bootstrap UCL	1.304	95% Bootstrap-t UCL	1.31
95% Hall's Bootstrap UCL	1.294	95% Percentile Bootstrap UCL	1.303
95% BCA Bootstrap UCL	1.298		
90% Chebyshev(Mean, Sd) UCL	1.344	95% Chebyshev(Mean, Sd) UCL	1.381
97.5% Chebyshev(Mean, Sd) UCL	1.432	99% Chebyshev(Mean, Sd) UCL	1.532

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.92	Mean	3.562
Maximum	4.47	Median	3.298
SD	0.641	Std. Error of Mean	0.262
Coefficient of Variation	0.18	Skewness	0.799
Mean of logged Data	1.257	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.089	95% Adjusted-CLT UCL (Chen-1995)	4.084
		95% Modified-t UCL (Johnson-1978)	4.104

Nonparametric Distribution Free UCLs

95% CLT UCL	3.992	95% Jackknife UCL	4.089
95% Standard Bootstrap UCL	3.957	95% Bootstrap-t UCL	5.243
95% Hall's Bootstrap UCL	8.805	95% Percentile Bootstrap UCL	3.987
95% BCA Bootstrap UCL	4.009		
90% Chebyshev(Mean, Sd) UCL	4.347	95% Chebyshev(Mean, Sd) UCL	4.703
97.5% Chebyshev(Mean, Sd) UCL	5.197	99% Chebyshev(Mean, Sd) UCL	6.167

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.857	Mean	1.58
Maximum	2.46	Median	1.46
SD	0.687	Std. Error of Mean	0.28
Coefficient of Variation	0.435	Skewness	0.36
Mean of logged Data	0.375	SD of logged Data	0.449

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.145	95% Adjusted-CLT UCL (Chen-1995)	2.085
		95% Modified-t UCL (Johnson-1978)	2.152

Nonparametric Distribution Free UCLs

95% CLT UCL	2.041	95% Jackknife UCL	2.145
95% Standard Bootstrap UCL	2.002	95% Bootstrap-t UCL	2.446
95% Hall's Bootstrap UCL	2.226	95% Percentile Bootstrap UCL	1.985
95% BCA Bootstrap UCL	2.035		
90% Chebyshev(Mean, Sd) UCL	2.421	95% Chebyshev(Mean, Sd) UCL	2.802
97.5% Chebyshev(Mean, Sd) UCL	3.331	99% Chebyshev(Mean, Sd) UCL	4.37

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.23	Mean	3.365
Maximum	4.49	Median	3.23
SD	0.844	Std. Error of Mean	0.345
Coefficient of Variation	0.251	Skewness	0.168
Mean of logged Data	1.186	SD of logged Data	0.257

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.059	95% Adjusted-CLT UCL (Chen-1995)	3.957
		95% Modified-t UCL (Johnson-1978)	4.063

Nonparametric Distribution Free UCLs

95% CLT UCL	3.932	95% Jackknife UCL	4.059
95% Standard Bootstrap UCL	3.883	95% Bootstrap-t UCL	4.339
95% Hall's Bootstrap UCL	4.455	95% Percentile Bootstrap UCL	3.913
95% BCA Bootstrap UCL	3.869		
90% Chebyshev(Mean, Sd) UCL	4.399	95% Chebyshev(Mean, Sd) UCL	4.867
97.5% Chebyshev(Mean, Sd) UCL	5.517	99% Chebyshev(Mean, Sd) UCL	6.794

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.125	Mean	6.03
Maximum	10.3	Median	5.275
SD	3.043	Std. Error of Mean	1.242
Coefficient of Variation	0.505	Skewness	0.518
Mean of logged Data	1.688	SD of logged Data	0.513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.533	95% Adjusted-CLT UCL (Chen-1995)	8.354
		95% Modified-t UCL (Johnson-1978)	8.577

Nonparametric Distribution Free UCLs

95% CLT UCL	8.073	95% Jackknife UCL	8.533
95% Standard Bootstrap UCL	7.885	95% Bootstrap-t UCL	9.047
95% Hall's Bootstrap UCL	8.146	95% Percentile Bootstrap UCL	7.999
95% BCA Bootstrap UCL	7.968		
90% Chebyshev(Mean, Sd) UCL	9.757	95% Chebyshev(Mean, Sd) UCL	11.44
97.5% Chebyshev(Mean, Sd) UCL	13.79	99% Chebyshev(Mean, Sd) UCL	18.39

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:22:02 AM
From File	40005M.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.3	Mean	12.32
Maximum	14.1	Median	12.05
SD	1.17	Std. Error of Mean	0.478
Coefficient of Variation	0.095	Skewness	0.624
Mean of logged Data	2.507	SD of logged Data	0.0936

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.28	95% Adjusted-CLT UCL (Chen-1995)	13.23
		95% Modified-t UCL (Johnson-1978)	13.3

Nonparametric Distribution Free UCLs

95% CLT UCL	13.1	95% Jackknife UCL	13.28
95% Standard Bootstrap UCL	13.02	95% Bootstrap-t UCL	13.44
95% Hall's Bootstrap UCL	12.9	95% Percentile Bootstrap UCL	13.02
95% BCA Bootstrap UCL	13.15		
90% Chebyshev(Mean, Sd) UCL	13.75	95% Chebyshev(Mean, Sd) UCL	14.4
97.5% Chebyshev(Mean, Sd) UCL	15.3	99% Chebyshev(Mean, Sd) UCL	17.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	9.32	Mean	9.837
Maximum	10.2	Median	9.83
SD	0.34	Std. Error of Mean	0.139
Coefficient of Variation	0.0345	Skewness	-0.381
Mean of logged Data	2.286	SD of logged Data	0.0347

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.12	95% Adjusted-CLT UCL (Chen-1995)	10.04
		95% Modified-t UCL (Johnson-1978)	10.11

Nonparametric Distribution Free UCLs

95% CLT UCL	10.06	95% Jackknife UCL	10.12
95% Standard Bootstrap UCL	10.05	95% Bootstrap-t UCL	10.1
95% Hall's Bootstrap UCL	10.11	95% Percentile Bootstrap UCL	10.04
95% BCA Bootstrap UCL	10.04		
90% Chebyshev(Mean, Sd) UCL	10.25	95% Chebyshev(Mean, Sd) UCL	10.44
97.5% Chebyshev(Mean, Sd) UCL	10.7	99% Chebyshev(Mean, Sd) UCL	11.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.7	Mean	45.43
Maximum	48.5	Median	45
SD	1.722	Std. Error of Mean	0.703
Coefficient of Variation	0.0379	Skewness	1.285
Mean of logged Data	3.816	SD of logged Data	0.0373

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.85	95% Adjusted-CLT UCL (Chen-1995)	46.98
		95% Modified-t UCL (Johnson-1978)	46.91

Nonparametric Distribution Free UCLs

95% CLT UCL	46.59	95% Jackknife UCL	46.85
95% Standard Bootstrap UCL	46.48	95% Bootstrap-t UCL	47.71
95% Hall's Bootstrap UCL	52.23	95% Percentile Bootstrap UCL	46.53
95% BCA Bootstrap UCL	46.88		
90% Chebyshev(Mean, Sd) UCL	47.54	95% Chebyshev(Mean, Sd) UCL	48.5
97.5% Chebyshev(Mean, Sd) UCL	49.82	99% Chebyshev(Mean, Sd) UCL	52.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.86	Mean	3.155
Maximum	5.31	Median	2.885
SD	1.184	Std. Error of Mean	0.483
Coefficient of Variation	0.375	Skewness	1.361
Mean of logged Data	1.096	SD of logged Data	0.351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.129	95% Adjusted-CLT UCL (Chen-1995)	4.237
		95% Modified-t UCL (Johnson-1978)	4.174

Nonparametric Distribution Free UCLs

95% CLT UCL	3.95	95% Jackknife UCL	4.129
95% Standard Bootstrap UCL	3.863	95% Bootstrap-t UCL	4.839
95% Hall's Bootstrap UCL	8.223	95% Percentile Bootstrap UCL	3.95
95% BCA Bootstrap UCL	4.077		
90% Chebyshev(Mean, Sd) UCL	4.605	95% Chebyshev(Mean, Sd) UCL	5.262
97.5% Chebyshev(Mean, Sd) UCL	6.173	99% Chebyshev(Mean, Sd) UCL	7.964

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.481	Mean	0.498
Maximum	0.525	Median	0.494
SD	0.0155	Std. Error of Mean	0.00632
Coefficient of Variation	0.0311	Skewness	1.163
Mean of logged Data	-0.698	SD of logged Data	0.0307

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.511	95% Adjusted-CLT UCL (Chen-1995)	0.512
		95% Modified-t UCL (Johnson-1978)	0.511

Nonparametric Distribution Free UCLs

95% CLT UCL	0.508	95% Jackknife UCL	0.511
95% Standard Bootstrap UCL	0.507	95% Bootstrap-t UCL	0.523
95% Hall's Bootstrap UCL	0.573	95% Percentile Bootstrap UCL	0.508
95% BCA Bootstrap UCL	0.51		
90% Chebyshev(Mean, Sd) UCL	0.517	95% Chebyshev(Mean, Sd) UCL	0.525
97.5% Chebyshev(Mean, Sd) UCL	0.537	99% Chebyshev(Mean, Sd) UCL	0.561

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.955	Mean	2.023
Maximum	2.14	Median	2.003
SD	0.0652	Std. Error of Mean	0.0266
Coefficient of Variation	0.0322	Skewness	1.311
Mean of logged Data	0.704	SD of logged Data	0.0318

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.077	95% Adjusted-CLT UCL (Chen-1995)	2.082
		95% Modified-t UCL (Johnson-1978)	2.079

Nonparametric Distribution Free UCLs

95% CLT UCL	2.067	95% Jackknife UCL	2.077
95% Standard Bootstrap UCL	2.064	95% Bootstrap-t UCL	2.137
95% Hall's Bootstrap UCL	2.324	95% Percentile Bootstrap UCL	2.069
95% BCA Bootstrap UCL	2.07		
90% Chebyshev(Mean, Sd) UCL	2.103	95% Chebyshev(Mean, Sd) UCL	2.139
97.5% Chebyshev(Mean, Sd) UCL	2.19	99% Chebyshev(Mean, Sd) UCL	2.288

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	3.993
Maximum	10.7	Median	2.743
SD	3.387	Std. Error of Mean	1.383
Coefficient of Variation	0.848	Skewness	2.141
Mean of logged Data	1.169	SD of logged Data	0.66

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.78	95% Adjusted-CLT UCL (Chen-1995)	7.559
		95% Modified-t UCL (Johnson-1978)	6.981

Nonparametric Distribution Free UCLs

95% CLT UCL	6.268	95% Jackknife UCL	6.78
95% Standard Bootstrap UCL	6.085	95% Bootstrap-t UCL	11.64
95% Hall's Bootstrap UCL	14.82	95% Percentile Bootstrap UCL	6.349
95% BCA Bootstrap UCL	6.958		
90% Chebyshev(Mean, Sd) UCL	8.142	95% Chebyshev(Mean, Sd) UCL	10.02
97.5% Chebyshev(Mean, Sd) UCL	12.63	99% Chebyshev(Mean, Sd) UCL	17.75

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	4.073
Maximum	9.93	Median	3.053
SD	3.083	Std. Error of Mean	1.259
Coefficient of Variation	0.757	Skewness	1.779
Mean of logged Data	1.21	SD of logged Data	0.651

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.609	95% Adjusted-CLT UCL (Chen-1995)	7.12
		95% Modified-t UCL (Johnson-1978)	6.762

Nonparametric Distribution Free UCLs

95% CLT UCL	6.143	95% Jackknife UCL	6.609
95% Standard Bootstrap UCL	5.909	95% Bootstrap-t UCL	9.197
95% Hall's Bootstrap UCL	13.4	95% Percentile Bootstrap UCL	6.16
95% BCA Bootstrap UCL	6.722		
90% Chebyshev(Mean, Sd) UCL	7.849	95% Chebyshev(Mean, Sd) UCL	9.559
97.5% Chebyshev(Mean, Sd) UCL	11.93	99% Chebyshev(Mean, Sd) UCL	16.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	6.809
Maximum	16.2	Median	5.2
SD	5.15	Std. Error of Mean	2.103
Coefficient of Variation	0.756	Skewness	1.476
Mean of logged Data	1.704	SD of logged Data	0.699

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.05	95% Adjusted-CLT UCL (Chen-1995)	11.62
		95% Modified-t UCL (Johnson-1978)	11.26

Nonparametric Distribution Free UCLs

95% CLT UCL	10.27	95% Jackknife UCL	11.05
95% Standard Bootstrap UCL	10.01	95% Bootstrap-t UCL	13.95
95% Hall's Bootstrap UCL	22.08	95% Percentile Bootstrap UCL	9.857
95% BCA Bootstrap UCL	11.18		
90% Chebyshev(Mean, Sd) UCL	13.12	95% Chebyshev(Mean, Sd) UCL	15.97
97.5% Chebyshev(Mean, Sd) UCL	19.94	99% Chebyshev(Mean, Sd) UCL	27.73

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	3.779
Maximum	6.42	Median	3.29
SD	1.317	Std. Error of Mean	0.538
Coefficient of Variation	0.348	Skewness	2.265
Mean of logged Data	1.29	SD of logged Data	0.289

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.862	95% Adjusted-CLT UCL (Chen-1995)	5.194
		95% Modified-t UCL (Johnson-1978)	4.945

Nonparametric Distribution Free UCLs

95% CLT UCL	4.663	95% Jackknife UCL	4.862
95% Standard Bootstrap UCL	4.581	95% Bootstrap-t UCL	7.474
95% Hall's Bootstrap UCL	8.566	95% Percentile Bootstrap UCL	4.808
95% BCA Bootstrap UCL	4.93		
90% Chebyshev(Mean, Sd) UCL	5.392	95% Chebyshev(Mean, Sd) UCL	6.122
97.5% Chebyshev(Mean, Sd) UCL	7.136	99% Chebyshev(Mean, Sd) UCL	9.128

Suggested UCL to Use

95% Student's-t UCL	4.862	or 95% Modified-t UCL	4.945

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	2.722
Maximum	5.31	Median	2.243
SD	1.296	Std. Error of Mean	0.529
Coefficient of Variation	0.476	Skewness	2.221
Mean of logged Data	0.931	SD of logged Data	0.381

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.788	95% Adjusted-CLT UCL (Chen-1995)	4.105

		95% Modified-t UCL (Johnson-1978)	3.868

Nonparametric Distribution Free UCLs

95% CLT UCL	3.592	95% Jackknife UCL	3.788
95% Standard Bootstrap UCL	3.508	95% Bootstrap-t UCL	6.086
95% Hall's Bootstrap UCL	7.235	95% Percentile Bootstrap UCL	3.648
95% BCA Bootstrap UCL	3.91		
90% Chebyshev(Mean, Sd) UCL	4.309	95% Chebyshev(Mean, Sd) UCL	5.029
97.5% Chebyshev(Mean, Sd) UCL	6.027	99% Chebyshev(Mean, Sd) UCL	7.987

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	4.952
Maximum	12.4	Median	3.743
SD	4.074	Std. Error of Mean	1.663
Coefficient of Variation	0.823	Skewness	1.491
Mean of logged Data	1.341	SD of logged Data	0.773

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.303	95% Adjusted-CLT UCL (Chen-1995)	8.769
		95% Modified-t UCL (Johnson-1978)	8.472

Nonparametric Distribution Free UCLs

95% CLT UCL	7.687	95% Jackknife UCL	8.303
95% Standard Bootstrap UCL	7.513	95% Bootstrap-t UCL	11.77
95% Hall's Bootstrap UCL	15.13	95% Percentile Bootstrap UCL	7.779
95% BCA Bootstrap UCL	8.349		
90% Chebyshev(Mean, Sd) UCL	9.941	95% Chebyshev(Mean, Sd) UCL	12.2
97.5% Chebyshev(Mean, Sd) UCL	15.34	99% Chebyshev(Mean, Sd) UCL	21.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	3.113
Maximum	3.29	Median	3.083
SD	0.1	Std. Error of Mean	0.0408
Coefficient of Variation	0.0321	Skewness	1.25
Mean of logged Data	1.135	SD of logged Data	0.0317

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.195	95% Adjusted-CLT UCL (Chen-1995)	3.202
		95% Modified-t UCL (Johnson-1978)	3.198

Nonparametric Distribution Free UCLs

95% CLT UCL	3.18	95% Jackknife UCL	3.195
95% Standard Bootstrap UCL	3.175	95% Bootstrap-t UCL	3.265
95% Hall's Bootstrap UCL	3.61	95% Percentile Bootstrap UCL	3.182
95% BCA Bootstrap UCL	3.198		
90% Chebyshev(Mean, Sd) UCL	3.235	95% Chebyshev(Mean, Sd) UCL	3.291
97.5% Chebyshev(Mean, Sd) UCL	3.368	99% Chebyshev(Mean, Sd) UCL	3.519

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	6.835
Maximum	18.9	Median	4.935
SD	6.616	Std. Error of Mean	2.701
Coefficient of Variation	0.968	Skewness	1.471
Mean of logged Data	1.531	SD of logged Data	0.971

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.28	95% Adjusted-CLT UCL (Chen-1995)	13.01
		95% Modified-t UCL (Johnson-1978)	12.55

Nonparametric Distribution Free UCLs

95% CLT UCL	11.28	95% Jackknife UCL	12.28

95% Standard Bootstrap UCL	10.92	95% Bootstrap-t UCL	16.64
95% Hall's Bootstrap UCL	17.91	95% Percentile Bootstrap UCL	11.42
95% BCA Bootstrap UCL	11.74		
90% Chebyshev(Mean, Sd) UCL	14.94	95% Chebyshev(Mean, Sd) UCL	18.61
97.5% Chebyshev(Mean, Sd) UCL	23.7	99% Chebyshev(Mean, Sd) UCL	33.71

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.2	Mean	1.464
Maximum	2.63	Median	1.233
SD	0.572	Std. Error of Mean	0.233
Coefficient of Variation	0.39	Skewness	2.442
Mean of logged Data	0.334	SD of logged Data	0.31

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.934	95% Adjusted-CLT UCL (Chen-1995)	2.096
		95% Modified-t UCL (Johnson-1978)	1.973

Nonparametric Distribution Free UCLs

95% CLT UCL	1.848	95% Jackknife UCL	1.934
95% Standard Bootstrap UCL	1.827	95% Bootstrap-t UCL	10.25
95% Hall's Bootstrap UCL	8.562	95% Percentile Bootstrap UCL	1.922
95% BCA Bootstrap UCL	1.937		
90% Chebyshev(Mean, Sd) UCL	2.164	95% Chebyshev(Mean, Sd) UCL	2.481
97.5% Chebyshev(Mean, Sd) UCL	2.921	99% Chebyshev(Mean, Sd) UCL	3.786

Suggested UCL to Use

95% Student's-t UCL	1.934	or 95% Modified-t UCL	1.973

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	3.859
Maximum	7	Median	3.275

SD	1.554	Std. Error of Mean	0.635
Coefficient of Variation	0.403	Skewness	2.342
Mean of logged Data	1.3	SD of logged Data	0.324

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.138	95% Adjusted-CLT UCL (Chen-1995)	5.551
		95% Modified-t UCL (Johnson-1978)	5.239

Nonparametric Distribution Free UCLs

95% CLT UCL	4.903	95% Jackknife UCL	5.138
95% Standard Bootstrap UCL	4.813	95% Bootstrap-t UCL	9.664
95% Hall's Bootstrap UCL	10.24	95% Percentile Bootstrap UCL	5.028
95% BCA Bootstrap UCL	5.197		
90% Chebyshev(Mean, Sd) UCL	5.763	95% Chebyshev(Mean, Sd) UCL	6.625
97.5% Chebyshev(Mean, Sd) UCL	7.822	99% Chebyshev(Mean, Sd) UCL	10.17

Suggested UCL to Use

95% Student's-t UCL	5.138	or 95% Modified-t UCL	5.239

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.93	Mean	13.08
Maximum	52.1	Median	6.46
SD	19.26	Std. Error of Mean	7.862
Coefficient of Variation	1.473	Skewness	2.366
Mean of logged Data	1.873	SD of logged Data	1.281

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.92	95% Adjusted-CLT UCL (Chen-1995)	34.13
		95% Modified-t UCL (Johnson-1978)	30.19

Nonparametric Distribution Free UCLs

95% CLT UCL	26.01	95% Jackknife UCL	28.92
95% Standard Bootstrap UCL	24.88	95% Bootstrap-t UCL	147.4
95% Hall's Bootstrap UCL	123	95% Percentile Bootstrap UCL	28.02
95% BCA Bootstrap UCL	29.46		
90% Chebyshev(Mean, Sd) UCL	36.66	95% Chebyshev(Mean, Sd) UCL	47.35

97.5% Chebyshev(Mean, Sd) UCL	62.18	99% Chebyshev(Mean, Sd) UCL	91.3

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.24	Mean	3.588
Maximum	6.67	Median	3.175
SD	1.557	Std. Error of Mean	0.635
Coefficient of Variation	0.434	Skewness	2.104
Mean of logged Data	1.216	SD of logged Data	0.362

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.868	95% Adjusted-CLT UCL (Chen-1995)	5.216
		95% Modified-t UCL (Johnson-1978)	4.959

Nonparametric Distribution Free UCLs

95% CLT UCL	4.633	95% Jackknife UCL	4.868
95% Standard Bootstrap UCL	4.558	95% Bootstrap-t UCL	9.663
95% Hall's Bootstrap UCL	10.69	95% Percentile Bootstrap UCL	4.793
95% BCA Bootstrap UCL	4.921		
90% Chebyshev(Mean, Sd) UCL	5.494	95% Chebyshev(Mean, Sd) UCL	6.358
97.5% Chebyshev(Mean, Sd) UCL	7.556	99% Chebyshev(Mean, Sd) UCL	9.911

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	7.078
Maximum	18.7	Median	5.145
SD	6.062	Std. Error of Mean	2.475
Coefficient of Variation	0.857	Skewness	1.851
Mean of logged Data	1.709	SD of logged Data	0.734

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.06	95% Adjusted-CLT UCL (Chen-1995)	13.15
		95% Modified-t UCL (Johnson-1978)	12.38

Nonparametric Distribution Free UCLs

95% CLT UCL	11.15	95% Jackknife UCL	12.06
95% Standard Bootstrap UCL	10.73	95% Bootstrap-t UCL	18.32
95% Hall's Bootstrap UCL	25.33	95% Percentile Bootstrap UCL	11.57
95% BCA Bootstrap UCL	12.3		
90% Chebyshev(Mean, Sd) UCL	14.5	95% Chebyshev(Mean, Sd) UCL	17.87
97.5% Chebyshev(Mean, Sd) UCL	22.53	99% Chebyshev(Mean, Sd) UCL	31.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:23:06 AM
From File	40005N.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.5	Mean	11.67
Maximum	13.6	Median	11.55
SD	1.095	Std. Error of Mean	0.447
Coefficient of Variation	0.0938	Skewness	1.147
Mean of logged Data	2.453	SD of logged Data	0.0911

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.57	95% Adjusted-CLT UCL (Chen-1995)	12.63
		95% Modified-t UCL (Johnson-1978)	12.6

Nonparametric Distribution Free UCLs

95% CLT UCL	12.4	95% Jackknife UCL	12.57
95% Standard Bootstrap UCL	12.34	95% Bootstrap-t UCL	12.92
95% Hall's Bootstrap UCL	16.49	95% Percentile Bootstrap UCL	12.38
95% BCA Bootstrap UCL	12.52		
90% Chebyshev(Mean, Sd) UCL	13.01	95% Chebyshev(Mean, Sd) UCL	13.61
97.5% Chebyshev(Mean, Sd) UCL	14.46	99% Chebyshev(Mean, Sd) UCL	16.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.45	Mean	10.49
Maximum	11.2	Median	10.6
SD	0.67	Std. Error of Mean	0.273
Coefficient of Variation	0.0638	Skewness	-0.659
Mean of logged Data	2.349	SD of logged Data	0.0649

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.04	95% Adjusted-CLT UCL (Chen-1995)	10.86
		95% Modified-t UCL (Johnson-1978)	11.03

Nonparametric Distribution Free UCLs

95% CLT UCL	10.94	95% Jackknife UCL	11.04
95% Standard Bootstrap UCL	10.9	95% Bootstrap-t UCL	10.97
95% Hall's Bootstrap UCL	10.84	95% Percentile Bootstrap UCL	10.88
95% BCA Bootstrap UCL	10.85		
90% Chebyshev(Mean, Sd) UCL	11.31	95% Chebyshev(Mean, Sd) UCL	11.68
97.5% Chebyshev(Mean, Sd) UCL	12.2	99% Chebyshev(Mean, Sd) UCL	13.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.7	Mean	44.77
Maximum	48.6	Median	44.3
SD	2.53	Std. Error of Mean	1.033
Coefficient of Variation	0.0565	Skewness	0.479
Mean of logged Data	3.8	SD of logged Data	0.0561

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.85	95% Adjusted-CLT UCL (Chen-1995)	46.68
		95% Modified-t UCL (Johnson-1978)	46.88

Nonparametric Distribution Free UCLs

95% CLT UCL	46.47	95% Jackknife UCL	46.85
95% Standard Bootstrap UCL	46.34	95% Bootstrap-t UCL	47.14
95% Hall's Bootstrap UCL	47.06	95% Percentile Bootstrap UCL	46.28
95% BCA Bootstrap UCL	46.47		
90% Chebyshev(Mean, Sd) UCL	47.86	95% Chebyshev(Mean, Sd) UCL	49.27
97.5% Chebyshev(Mean, Sd) UCL	51.22	99% Chebyshev(Mean, Sd) UCL	55.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.51	Mean	3.06
Maximum	3.39	Median	3.21
SD	0.361	Std. Error of Mean	0.147
Coefficient of Variation	0.118	Skewness	-0.936
Mean of logged Data	1.112	SD of logged Data	0.123

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.357	95% Adjusted-CLT UCL (Chen-1995)	3.242
		95% Modified-t UCL (Johnson-1978)	3.348

Nonparametric Distribution Free UCLs

95% CLT UCL	3.302	95% Jackknife UCL	3.357
95% Standard Bootstrap UCL	3.281	95% Bootstrap-t UCL	3.294
95% Hall's Bootstrap UCL	3.214	95% Percentile Bootstrap UCL	3.27
95% BCA Bootstrap UCL	3.24		
90% Chebyshev(Mean, Sd) UCL	3.502	95% Chebyshev(Mean, Sd) UCL	3.703
97.5% Chebyshev(Mean, Sd) UCL	3.981	99% Chebyshev(Mean, Sd) UCL	4.527

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.315	Mean	1.895
Maximum	7.39	Median	0.528
SD	2.77	Std. Error of Mean	1.131
Coefficient of Variation	1.462	Skewness	2.178
Mean of logged Data	-0.0595	SD of logged Data	1.193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.173	95% Adjusted-CLT UCL (Chen-1995)	4.829
		95% Modified-t UCL (Johnson-1978)	4.341

Nonparametric Distribution Free UCLs

95% CLT UCL	3.755	95% Jackknife UCL	4.173
95% Standard Bootstrap UCL	3.61	95% Bootstrap-t UCL	39.43
95% Hall's Bootstrap UCL	34.25	95% Percentile Bootstrap UCL	3.92
95% BCA Bootstrap UCL	4.219		
90% Chebyshev(Mean, Sd) UCL	5.287	95% Chebyshev(Mean, Sd) UCL	6.824
97.5% Chebyshev(Mean, Sd) UCL	8.957	99% Chebyshev(Mean, Sd) UCL	13.15

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.06	Mean	6.243
Maximum	17.3	Median	2.14
SD	6.636	Std. Error of Mean	2.709
Coefficient of Variation	1.063	Skewness	1.265
Mean of logged Data	1.384	SD of logged Data	0.992

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.7	95% Adjusted-CLT UCL (Chen-1995)	12.2
		95% Modified-t UCL (Johnson-1978)	11.94

Nonparametric Distribution Free UCLs

95% CLT UCL	10.7	95% Jackknife UCL	11.7
95% Standard Bootstrap UCL	10.32	95% Bootstrap-t UCL	826.6
95% Hall's Bootstrap UCL	617.2	95% Percentile Bootstrap UCL	10.38
95% BCA Bootstrap UCL	11.31		
90% Chebyshev(Mean, Sd) UCL	14.37	95% Chebyshev(Mean, Sd) UCL	18.05
97.5% Chebyshev(Mean, Sd) UCL	23.16	99% Chebyshev(Mean, Sd) UCL	33.2

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.05

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.135	Mean	22.68
Maximum	66.5	Median	5.735
SD	29.36	Std. Error of Mean	11.99
Coefficient of Variation	1.295	Skewness	1.033
Mean of logged Data	2.192	SD of logged Data	1.54

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.83	95% Adjusted-CLT UCL (Chen-1995)	47.79
		95% Modified-t UCL (Johnson-1978)	47.67

Nonparametric Distribution Free UCLs

95% CLT UCL	42.39	95% Jackknife UCL	46.83
95% Standard Bootstrap UCL	40.76	95% Bootstrap-t UCL	282
95% Hall's Bootstrap UCL	275.5	95% Percentile Bootstrap UCL	42.01
95% BCA Bootstrap UCL	42.93		
90% Chebyshev(Mean, Sd) UCL	58.63	95% Chebyshev(Mean, Sd) UCL	74.92
97.5% Chebyshev(Mean, Sd) UCL	97.52	99% Chebyshev(Mean, Sd) UCL	141.9

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.135	Mean	23.6
Maximum	73.5	Median	6.77
SD	30.65	Std. Error of Mean	12.51
Coefficient of Variation	1.299	Skewness	1.183
Mean of logged Data	2.246	SD of logged Data	1.541

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.82	95% Adjusted-CLT UCL (Chen-1995)	50.64
		95% Modified-t UCL (Johnson-1978)	49.83

Nonparametric Distribution Free UCLs

95% CLT UCL	44.19	95% Jackknife UCL	48.82
95% Standard Bootstrap UCL	42.39	95% Bootstrap-t UCL	250.9
95% Hall's Bootstrap UCL	261.9	95% Percentile Bootstrap UCL	43.08
95% BCA Bootstrap UCL	46.29		
90% Chebyshev(Mean, Sd) UCL	61.15	95% Chebyshev(Mean, Sd) UCL	78.15
97.5% Chebyshev(Mean, Sd) UCL	101.8	99% Chebyshev(Mean, Sd) UCL	148.1

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.285	Mean	31.63
Maximum	95.1	Median	9.885
SD	39.85	Std. Error of Mean	16.27
Coefficient of Variation	1.26	Skewness	1.129
Mean of logged Data	2.612	SD of logged Data	1.47

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.4	95% Adjusted-CLT UCL (Chen-1995)	66.4
		95% Modified-t UCL (Johnson-1978)	65.65

Nonparametric Distribution Free UCLs

95% CLT UCL	58.38	95% Jackknife UCL	64.4
95% Standard Bootstrap UCL	56.1	95% Bootstrap-t UCL	262.7
95% Hall's Bootstrap UCL	356.3	95% Percentile Bootstrap UCL	57.1
95% BCA Bootstrap UCL	61.57		
90% Chebyshev(Mean, Sd) UCL	80.43	95% Chebyshev(Mean, Sd) UCL	102.5
97.5% Chebyshev(Mean, Sd) UCL	133.2	99% Chebyshev(Mean, Sd) UCL	193.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.12	Mean	13.99
Maximum	41.7	Median	4.96
SD	16.19	Std. Error of Mean	6.611
Coefficient of Variation	1.158	Skewness	1.331
Mean of logged Data	2.066	SD of logged Data	1.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.31	95% Adjusted-CLT UCL (Chen-1995)	28.7
		95% Modified-t UCL (Johnson-1978)	27.91

Nonparametric Distribution Free UCLs

95% CLT UCL	24.86	95% Jackknife UCL	27.31
95% Standard Bootstrap UCL	23.74	95% Bootstrap-t UCL	103.5
95% Hall's Bootstrap UCL	195.7	95% Percentile Bootstrap UCL	24.19
95% BCA Bootstrap UCL	26.24		
90% Chebyshev(Mean, Sd) UCL	33.82	95% Chebyshev(Mean, Sd) UCL	42.8
97.5% Chebyshev(Mean, Sd) UCL	55.27	99% Chebyshev(Mean, Sd) UCL	79.76

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.135	Mean	12.8
Maximum	41.4	Median	4.105
SD	16.14	Std. Error of Mean	6.59
Coefficient of Variation	1.261	Skewness	1.467
Mean of logged Data	1.843	SD of logged Data	1.291

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.08	95% Adjusted-CLT UCL (Chen-1995)	27.86
		95% Modified-t UCL (Johnson-1978)	26.74

Nonparametric Distribution Free UCLs

95% CLT UCL	23.64	95% Jackknife UCL	26.08
95% Standard Bootstrap UCL	22.48	95% Bootstrap-t UCL	102.7
95% Hall's Bootstrap UCL	176	95% Percentile Bootstrap UCL	22.92
95% BCA Bootstrap UCL	25.81		
90% Chebyshev(Mean, Sd) UCL	32.57	95% Chebyshev(Mean, Sd) UCL	41.52
97.5% Chebyshev(Mean, Sd) UCL	53.95	99% Chebyshev(Mean, Sd) UCL	78.37

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.135	Mean	21.28
Maximum	59.3	Median	7.89
SD	25.61	Std. Error of Mean	10.46
Coefficient of Variation	1.204	Skewness	0.988
Mean of logged Data	2.249	SD of logged Data	1.469

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.35	95% Adjusted-CLT UCL (Chen-1995)	42.98
		95% Modified-t UCL (Johnson-1978)	43.05

Nonparametric Distribution Free UCLs

95% CLT UCL	38.48	95% Jackknife UCL	42.35
95% Standard Bootstrap UCL	36.86	95% Bootstrap-t UCL	151.1
95% Hall's Bootstrap UCL	201	95% Percentile Bootstrap UCL	38.41
95% BCA Bootstrap UCL	39.81		
90% Chebyshev(Mean, Sd) UCL	52.65	95% Chebyshev(Mean, Sd) UCL	66.86
97.5% Chebyshev(Mean, Sd) UCL	86.58	99% Chebyshev(Mean, Sd) UCL	125.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.175	Mean	5.573
Maximum	12.7	Median	3.293
SD	3.922	Std. Error of Mean	1.601
Coefficient of Variation	0.704	Skewness	1.601
Mean of logged Data	1.551	SD of logged Data	0.596

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.8	95% Adjusted-CLT UCL (Chen-1995)	9.325
		95% Modified-t UCL (Johnson-1978)	8.974

Nonparametric Distribution Free UCLs

95% CLT UCL	8.207	95% Jackknife UCL	8.8
95% Standard Bootstrap UCL	8.017	95% Bootstrap-t UCL	173.4
95% Hall's Bootstrap UCL	122.5	95% Percentile Bootstrap UCL	7.973
95% BCA Bootstrap UCL	8.732		
90% Chebyshev(Mean, Sd) UCL	10.38	95% Chebyshev(Mean, Sd) UCL	12.55
97.5% Chebyshev(Mean, Sd) UCL	15.57	99% Chebyshev(Mean, Sd) UCL	21.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.55

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.135	Mean	22.9
Maximum	91.7	Median	11.85
SD	34.26	Std. Error of Mean	13.98
Coefficient of Variation	1.496	Skewness	2.276
Mean of logged Data	2.309	SD of logged Data	1.418

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	51.08	95% Adjusted-CLT UCL (Chen-1995)	59.78
		95% Modified-t UCL (Johnson-1978)	53.24

Nonparametric Distribution Free UCLs

95% CLT UCL	45.9	95% Jackknife UCL	51.08
95% Standard Bootstrap UCL	44.17	95% Bootstrap-t UCL	127.2
95% Hall's Bootstrap UCL	164.8	95% Percentile Bootstrap UCL	48.47
95% BCA Bootstrap UCL	53.65		
90% Chebyshev(Mean, Sd) UCL	64.85	95% Chebyshev(Mean, Sd) UCL	83.85
97.5% Chebyshev(Mean, Sd) UCL	110.2	99% Chebyshev(Mean, Sd) UCL	162

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.27	Mean	2.25
Maximum	6.61	Median	1.318
SD	2.141	Std. Error of Mean	0.874
Coefficient of Variation	0.952	Skewness	2.423
Mean of logged Data	0.577	SD of logged Data	0.651

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.012	95% Adjusted-CLT UCL (Chen-1995)	4.612
		95% Modified-t UCL (Johnson-1978)	4.156

Nonparametric Distribution Free UCLs

95% CLT UCL	3.688	95% Jackknife UCL	4.012
95% Standard Bootstrap UCL	3.563	95% Bootstrap-t UCL	100.3
95% Hall's Bootstrap UCL	54.09	95% Percentile Bootstrap UCL	3.959
95% BCA Bootstrap UCL	4.085		
90% Chebyshev(Mean, Sd) UCL	4.873	95% Chebyshev(Mean, Sd) UCL	6.061
97.5% Chebyshev(Mean, Sd) UCL	7.709	99% Chebyshev(Mean, Sd) UCL	10.95

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.061

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.285	Mean	19.01
Maximum	59.3	Median	5.475
SD	23.75	Std. Error of Mean	9.697
Coefficient of Variation	1.25	Skewness	1.309
Mean of logged Data	2.228	SD of logged Data	1.298

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.55	95% Adjusted-CLT UCL (Chen-1995)	40.49
		95% Modified-t UCL (Johnson-1978)	39.41

Nonparametric Distribution Free UCLs

95% CLT UCL	34.96	95% Jackknife UCL	38.55
95% Standard Bootstrap UCL	33.18	95% Bootstrap-t UCL	191.7
95% Hall's Bootstrap UCL	361.7	95% Percentile Bootstrap UCL	33.99
95% BCA Bootstrap UCL	37.08		
90% Chebyshev(Mean, Sd) UCL	48.1	95% Chebyshev(Mean, Sd) UCL	61.27
97.5% Chebyshev(Mean, Sd) UCL	79.56	99% Chebyshev(Mean, Sd) UCL	115.5

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.06	Mean	5.863
Maximum	6.6	Median	5.965
SD	0.679	Std. Error of Mean	0.277
Coefficient of Variation	0.116	Skewness	-0.281
Mean of logged Data	1.763	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.422	95% Adjusted-CLT UCL (Chen-1995)	6.285
		95% Modified-t UCL (Johnson-1978)	6.417

Nonparametric Distribution Free UCLs

95% CLT UCL	6.319	95% Jackknife UCL	6.422
95% Standard Bootstrap UCL	6.266	95% Bootstrap-t UCL	6.366
95% Hall's Bootstrap UCL	6.213	95% Percentile Bootstrap UCL	6.283
95% BCA Bootstrap UCL	6.267		
90% Chebyshev(Mean, Sd) UCL	6.695	95% Chebyshev(Mean, Sd) UCL	7.071
97.5% Chebyshev(Mean, Sd) UCL	7.594	99% Chebyshev(Mean, Sd) UCL	8.621

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.285	Mean	24.87
Maximum	86.1	Median	5.955
SD	34.02	Std. Error of Mean	13.89
Coefficient of Variation	1.368	Skewness	1.551
Mean of logged Data	2.362	SD of logged Data	1.411

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.85	95% Adjusted-CLT UCL (Chen-1995)	57.11
		95% Modified-t UCL (Johnson-1978)	54.32

Nonparametric Distribution Free UCLs

95% CLT UCL	47.71	95% Jackknife UCL	52.85
95% Standard Bootstrap UCL	45.51	95% Bootstrap-t UCL	485
95% Hall's Bootstrap UCL	322	95% Percentile Bootstrap UCL	45.5
95% BCA Bootstrap UCL	51.85		
90% Chebyshev(Mean, Sd) UCL	66.53	95% Chebyshev(Mean, Sd) UCL	85.41
97.5% Chebyshev(Mean, Sd) UCL	111.6	99% Chebyshev(Mean, Sd) UCL	163.1

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.285	Mean	35.18
Maximum	96.8	Median	12.9
SD	42.48	Std. Error of Mean	17.34
Coefficient of Variation	1.207	Skewness	0.97
Mean of logged Data	2.737	SD of logged Data	1.491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	70.13	95% Adjusted-CLT UCL (Chen-1995)	71.04
		95% Modified-t UCL (Johnson-1978)	71.27

Nonparametric Distribution Free UCLs

95% CLT UCL	63.71	95% Jackknife UCL	70.13
95% Standard Bootstrap UCL	61.26	95% Bootstrap-t UCL	232.6
95% Hall's Bootstrap UCL	345.9	95% Percentile Bootstrap UCL	62.9
95% BCA Bootstrap UCL	64.27		
90% Chebyshev(Mean, Sd) UCL	87.21	95% Chebyshev(Mean, Sd) UCL	110.8
97.5% Chebyshev(Mean, Sd) UCL	143.5	99% Chebyshev(Mean, Sd) UCL	207.7

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:24:13 AM
From File	40005O.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.61	Mean	14.3
Maximum	22.3	Median	13.95
SD	4.503	Std. Error of Mean	1.838
Coefficient of Variation	0.315	Skewness	1.178
Mean of logged Data	2.622	SD of logged Data	0.298

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.01	95% Adjusted-CLT UCL (Chen-1995)	18.27
		95% Modified-t UCL (Johnson-1978)	18.15

Nonparametric Distribution Free UCLs

95% CLT UCL	17.33	95% Jackknife UCL	18.01
95% Standard Bootstrap UCL	17.12	95% Bootstrap-t UCL	19.44
95% Hall's Bootstrap UCL	31.6	95% Percentile Bootstrap UCL	17.29
95% BCA Bootstrap UCL	18.24		
90% Chebyshev(Mean, Sd) UCL	19.82	95% Chebyshev(Mean, Sd) UCL	22.31
97.5% Chebyshev(Mean, Sd) UCL	25.78	99% Chebyshev(Mean, Sd) UCL	32.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10	Mean	10.92
Maximum	11.5	Median	10.95
SD	0.504	Std. Error of Mean	0.206
Coefficient of Variation	0.0461	Skewness	-1.288
Mean of logged Data	2.389	SD of logged Data	0.0472

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.33	95% Adjusted-CLT UCL (Chen-1995)	11.14
		95% Modified-t UCL (Johnson-1978)	11.31

Nonparametric Distribution Free UCLs

95% CLT UCL	11.25	95% Jackknife UCL	11.33
95% Standard Bootstrap UCL	11.23	95% Bootstrap-t UCL	11.23
95% Hall's Bootstrap UCL	11.19	95% Percentile Bootstrap UCL	11.2
95% BCA Bootstrap UCL	11.15		
90% Chebyshev(Mean, Sd) UCL	11.53	95% Chebyshev(Mean, Sd) UCL	11.81
97.5% Chebyshev(Mean, Sd) UCL	12.2	99% Chebyshev(Mean, Sd) UCL	12.96

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	36.2	Mean	43.35
Maximum	51.6	Median	43.25
SD	6.67	Std. Error of Mean	2.723
Coefficient of Variation	0.154	Skewness	0.0978
Mean of logged Data	3.759	SD of logged Data	0.154

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.84	95% Adjusted-CLT UCL (Chen-1995)	47.95
		95% Modified-t UCL (Johnson-1978)	48.86

Nonparametric Distribution Free UCLs

95% CLT UCL	47.83	95% Jackknife UCL	48.84
95% Standard Bootstrap UCL	47.48	95% Bootstrap-t UCL	49.24
95% Hall's Bootstrap UCL	46.05	95% Percentile Bootstrap UCL	47.53
95% BCA Bootstrap UCL	47.37		
90% Chebyshev(Mean, Sd) UCL	51.52	95% Chebyshev(Mean, Sd) UCL	55.22
97.5% Chebyshev(Mean, Sd) UCL	60.35	99% Chebyshev(Mean, Sd) UCL	70.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.25	Mean	2.542
Maximum	3.34	Median	2.32
SD	0.431	Std. Error of Mean	0.176
Coefficient of Variation	0.17	Skewness	1.694
Mean of logged Data	0.922	SD of logged Data	0.157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.896	95% Adjusted-CLT UCL (Chen-1995)	2.961
		95% Modified-t UCL (Johnson-1978)	2.916

Nonparametric Distribution Free UCLs

95% CLT UCL	2.831	95% Jackknife UCL	2.896
95% Standard Bootstrap UCL	2.803	95% Bootstrap-t UCL	5.851
95% Hall's Bootstrap UCL	5.193	95% Percentile Bootstrap UCL	2.818
95% BCA Bootstrap UCL	2.897		
90% Chebyshev(Mean, Sd) UCL	3.069	95% Chebyshev(Mean, Sd) UCL	3.309
97.5% Chebyshev(Mean, Sd) UCL	3.64	99% Chebyshev(Mean, Sd) UCL	4.292

Suggested UCL to Use

95% Student's-t UCL	2.896	or 95% Modified-t UCL	2.916

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.419	Mean	0.751
Maximum	1.99	Median	0.513
SD	0.61	Std. Error of Mean	0.249
Coefficient of Variation	0.812	Skewness	2.402
Mean of logged Data	-0.463	SD of logged Data	0.575

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.252	95% Adjusted-CLT UCL (Chen-1995)	1.421
		95% Modified-t UCL (Johnson-1978)	1.293

Nonparametric Distribution Free UCLs

95% CLT UCL	1.16	95% Jackknife UCL	1.252
95% Standard Bootstrap UCL	1.111	95% Bootstrap-t UCL	4.816
95% Hall's Bootstrap UCL	4.186	95% Percentile Bootstrap UCL	1.236
95% BCA Bootstrap UCL	1.272		
90% Chebyshev(Mean, Sd) UCL	1.498	95% Chebyshev(Mean, Sd) UCL	1.836
97.5% Chebyshev(Mean, Sd) UCL	2.305	99% Chebyshev(Mean, Sd) UCL	3.227

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.836

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.51	Mean	2.638
Maximum	6.13	Median	2.043
SD	1.725	Std. Error of Mean	0.704
Coefficient of Variation	0.654	Skewness	2.357
Mean of logged Data	0.848	SD of logged Data	0.489

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.056	95% Adjusted-CLT UCL (Chen-1995)	4.52
		95% Modified-t UCL (Johnson-1978)	4.169

Nonparametric Distribution Free UCLs

95% CLT UCL	3.796	95% Jackknife UCL	4.056
95% Standard Bootstrap UCL	3.716	95% Bootstrap-t UCL	21.51
95% Hall's Bootstrap UCL	12.69	95% Percentile Bootstrap UCL	4
95% BCA Bootstrap UCL	4.089		
90% Chebyshev(Mean, Sd) UCL	4.75	95% Chebyshev(Mean, Sd) UCL	5.707
97.5% Chebyshev(Mean, Sd) UCL	7.035	99% Chebyshev(Mean, Sd) UCL	9.644

Suggested UCL to Use

95% Student's-t UCL	4.056	or 95% Modified-t UCL	4.169

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.83	Mean	11.39
Maximum	40	Median	7.015
SD	14.31	Std. Error of Mean	5.842
Coefficient of Variation	1.256	Skewness	2.226
Mean of logged Data	1.918	SD of logged Data	1.07

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.16	95% Adjusted-CLT UCL (Chen-1995)	26.67
		95% Modified-t UCL (Johnson-1978)	24.05

Nonparametric Distribution Free UCLs

95% CLT UCL	21	95% Jackknife UCL	23.16
95% Standard Bootstrap UCL	20.19	95% Bootstrap-t UCL	49.4
95% Hall's Bootstrap UCL	68.38	95% Percentile Bootstrap UCL	22.04
95% BCA Bootstrap UCL	23.76		
90% Chebyshev(Mean, Sd) UCL	28.92	95% Chebyshev(Mean, Sd) UCL	36.86
97.5% Chebyshev(Mean, Sd) UCL	47.88	99% Chebyshev(Mean, Sd) UCL	69.52

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.36	Mean	11.54
Maximum	37.4	Median	7.415
SD	13.14	Std. Error of Mean	5.366
Coefficient of Variation	1.139	Skewness	2.075
Mean of logged Data	2.003	SD of logged Data	0.997

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.36	95% Adjusted-CLT UCL (Chen-1995)	25.23
		95% Modified-t UCL (Johnson-1978)	23.11

Nonparametric Distribution Free UCLs

95% CLT UCL	20.37	95% Jackknife UCL	22.36
95% Standard Bootstrap UCL	19.5	95% Bootstrap-t UCL	44.57
95% Hall's Bootstrap UCL	54.5	95% Percentile Bootstrap UCL	20.69
95% BCA Bootstrap UCL	23.7		
90% Chebyshev(Mean, Sd) UCL	27.64	95% Chebyshev(Mean, Sd) UCL	34.93
97.5% Chebyshev(Mean, Sd) UCL	45.05	99% Chebyshev(Mean, Sd) UCL	64.93

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	15.89
Maximum	51	Median	10.6
SD	17.86	Std. Error of Mean	7.291
Coefficient of Variation	1.124	Skewness	2.067
Mean of logged Data	2.332	SD of logged Data	0.991

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.58	95% Adjusted-CLT UCL (Chen-1995)	34.45
		95% Modified-t UCL (Johnson-1978)	31.6

Nonparametric Distribution Free UCLs

95% CLT UCL	27.88	95% Jackknife UCL	30.58
95% Standard Bootstrap UCL	26.83	95% Bootstrap-t UCL	53.81
95% Hall's Bootstrap UCL	75.5	95% Percentile Bootstrap UCL	29.02
95% BCA Bootstrap UCL	31.6		
90% Chebyshev(Mean, Sd) UCL	37.76	95% Chebyshev(Mean, Sd) UCL	47.67
97.5% Chebyshev(Mean, Sd) UCL	61.42	99% Chebyshev(Mean, Sd) UCL	88.43

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.02	Mean	6.864
Maximum	18.6	Median	4.905
SD	5.992	Std. Error of Mean	2.446
Coefficient of Variation	0.873	Skewness	2.038
Mean of logged Data	1.687	SD of logged Data	0.706

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.79	95% Adjusted-CLT UCL (Chen-1995)	13.06
		95% Modified-t UCL (Johnson-1978)	12.13

Nonparametric Distribution Free UCLs

95% CLT UCL	10.89	95% Jackknife UCL	11.79
95% Standard Bootstrap UCL	10.59	95% Bootstrap-t UCL	20.19
95% Hall's Bootstrap UCL	25.31	95% Percentile Bootstrap UCL	10.89
95% BCA Bootstrap UCL	12.02		
90% Chebyshev(Mean, Sd) UCL	14.2	95% Chebyshev(Mean, Sd) UCL	17.53
97.5% Chebyshev(Mean, Sd) UCL	22.14	99% Chebyshev(Mean, Sd) UCL	31.2

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.045	Mean	5.849
Maximum	17.4	Median	3.945
SD	5.857	Std. Error of Mean	2.391
Coefficient of Variation	1.001	Skewness	2.1
Mean of logged Data	1.453	SD of logged Data	0.81

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.67	95% Adjusted-CLT UCL (Chen-1995)	11.97

		95% Modified-t UCL (Johnson-1978)	11.01

Nonparametric Distribution Free UCLs

95% CLT UCL	9.782	95% Jackknife UCL	10.67
95% Standard Bootstrap UCL	9.398	95% Bootstrap-t UCL	18.64
95% Hall's Bootstrap UCL	24.6	95% Percentile Bootstrap UCL	10
95% BCA Bootstrap UCL	11.05		
90% Chebyshev(Mean, Sd) UCL	13.02	95% Chebyshev(Mean, Sd) UCL	16.27
97.5% Chebyshev(Mean, Sd) UCL	20.78	99% Chebyshev(Mean, Sd) UCL	29.64

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.27	Mean	12.67
Maximum	42.5	Median	8.405
SD	15.06	Std. Error of Mean	6.148
Coefficient of Variation	1.188	Skewness	2.135
Mean of logged Data	2.06	SD of logged Data	1.041

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.06	95% Adjusted-CLT UCL (Chen-1995)	28.51
		95% Modified-t UCL (Johnson-1978)	25.95

Nonparametric Distribution Free UCLs

95% CLT UCL	22.79	95% Jackknife UCL	25.06
95% Standard Bootstrap UCL	21.91	95% Bootstrap-t UCL	48.34
95% Hall's Bootstrap UCL	64.67	95% Percentile Bootstrap UCL	23.87
95% BCA Bootstrap UCL	26.62		
90% Chebyshev(Mean, Sd) UCL	31.12	95% Chebyshev(Mean, Sd) UCL	39.47
97.5% Chebyshev(Mean, Sd) UCL	51.07	99% Chebyshev(Mean, Sd) UCL	73.84

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.74	Mean	3.454
Maximum	5.43	Median	3.143
SD	0.984	Std. Error of Mean	0.402
Coefficient of Variation	0.285	Skewness	2.264
Mean of logged Data	1.212	SD of logged Data	0.242

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.264	95% Adjusted-CLT UCL (Chen-1995)	4.512
		95% Modified-t UCL (Johnson-1978)	4.326

Nonparametric Distribution Free UCLs

95% CLT UCL	4.115	95% Jackknife UCL	4.264
95% Standard Bootstrap UCL	4.063	95% Bootstrap-t UCL	6.904
95% Hall's Bootstrap UCL	8.213	95% Percentile Bootstrap UCL	4.197
95% BCA Bootstrap UCL	4.303		
90% Chebyshev(Mean, Sd) UCL	4.66	95% Chebyshev(Mean, Sd) UCL	5.206
97.5% Chebyshev(Mean, Sd) UCL	5.963	99% Chebyshev(Mean, Sd) UCL	7.452

Suggested UCL to Use

95% Student's-t UCL	4.264	or 95% Modified-t UCL	4.326

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.86	Mean	25.07
Maximum	81.7	Median	17.6
SD	28.69	Std. Error of Mean	11.71
Coefficient of Variation	1.144	Skewness	2.094
Mean of logged Data	2.752	SD of logged Data	1.06

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.67	95% Adjusted-CLT UCL (Chen-1995)	55.04
		95% Modified-t UCL (Johnson-1978)	50.34

Nonparametric Distribution Free UCLs

95% CLT UCL	44.34	95% Jackknife UCL	48.67

95% Standard Bootstrap UCL	42.55	95% Bootstrap-t UCL	82.55
95% Hall's Bootstrap UCL	135.4	95% Percentile Bootstrap UCL	46.89
95% BCA Bootstrap UCL	50.33		
90% Chebyshev(Mean, Sd) UCL	60.21	95% Chebyshev(Mean, Sd) UCL	76.12
97.5% Chebyshev(Mean, Sd) UCL	98.22	99% Chebyshev(Mean, Sd) UCL	141.6

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.205	Mean	1.303
Maximum	1.47	Median	1.28
SD	0.0999	Std. Error of Mean	0.0408
Coefficient of Variation	0.0767	Skewness	0.99
Mean of logged Data	0.262	SD of logged Data	0.0751

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.385	95% Adjusted-CLT UCL (Chen-1995)	1.387
		95% Modified-t UCL (Johnson-1978)	1.387

Nonparametric Distribution Free UCLs

95% CLT UCL	1.37	95% Jackknife UCL	1.385
95% Standard Bootstrap UCL	1.365	95% Bootstrap-t UCL	1.426
95% Hall's Bootstrap UCL	1.483	95% Percentile Bootstrap UCL	1.371
95% BCA Bootstrap UCL	1.372		
90% Chebyshev(Mean, Sd) UCL	1.425	95% Chebyshev(Mean, Sd) UCL	1.48
97.5% Chebyshev(Mean, Sd) UCL	1.557	99% Chebyshev(Mean, Sd) UCL	1.708

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.66	Mean	8.713
Maximum	26.4	Median	5.81

SD	8.949	Std. Error of Mean	3.653
Coefficient of Variation	1.027	Skewness	2.12
Mean of logged Data	1.834	SD of logged Data	0.834

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.07	95% Adjusted-CLT UCL (Chen-1995)	18.1
		95% Modified-t UCL (Johnson-1978)	16.6

Nonparametric Distribution Free UCLs

95% CLT UCL	14.72	95% Jackknife UCL	16.07
95% Standard Bootstrap UCL	14.08	95% Bootstrap-t UCL	27.41
95% Hall's Bootstrap UCL	38.37	95% Percentile Bootstrap UCL	14.93
95% BCA Bootstrap UCL	16.31		
90% Chebyshev(Mean, Sd) UCL	19.67	95% Chebyshev(Mean, Sd) UCL	24.64
97.5% Chebyshev(Mean, Sd) UCL	31.53	99% Chebyshev(Mean, Sd) UCL	45.06

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4	Mean	4.992
Maximum	6.24	Median	4.82
SD	0.922	Std. Error of Mean	0.376
Coefficient of Variation	0.185	Skewness	0.447
Mean of logged Data	1.594	SD of logged Data	0.183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.75	95% Adjusted-CLT UCL (Chen-1995)	5.684
		95% Modified-t UCL (Johnson-1978)	5.762

Nonparametric Distribution Free UCLs

95% CLT UCL	5.611	95% Jackknife UCL	5.75
95% Standard Bootstrap UCL	5.544	95% Bootstrap-t UCL	6.081
95% Hall's Bootstrap UCL	6.49	95% Percentile Bootstrap UCL	5.59
95% BCA Bootstrap UCL	5.643		
90% Chebyshev(Mean, Sd) UCL	6.121	95% Chebyshev(Mean, Sd) UCL	6.633

97.5% Chebyshev(Mean, Sd) UCL	7.343	99% Chebyshev(Mean, Sd) UCL	8.738

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.83	Mean	10.61
Maximum	32.9	Median	7.585
SD	11.27	Std. Error of Mean	4.599
Coefficient of Variation	1.062	Skewness	2.122
Mean of logged Data	1.996	SD of logged Data	0.893

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.88	95% Adjusted-CLT UCL (Chen-1995)	22.43
		95% Modified-t UCL (Johnson-1978)	20.54

Nonparametric Distribution Free UCLs

95% CLT UCL	18.17	95% Jackknife UCL	19.88
95% Standard Bootstrap UCL	17.67	95% Bootstrap-t UCL	35.7
95% Hall's Bootstrap UCL	52.3	95% Percentile Bootstrap UCL	18.83
95% BCA Bootstrap UCL	20.07		
90% Chebyshev(Mean, Sd) UCL	24.41	95% Chebyshev(Mean, Sd) UCL	30.66
97.5% Chebyshev(Mean, Sd) UCL	39.33	99% Chebyshev(Mean, Sd) UCL	56.37

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.77	Mean	23.84
Maximum	82.1	Median	15.6
SD	29.21	Std. Error of Mean	11.92
Coefficient of Variation	1.225	Skewness	2.202
Mean of logged Data	2.67	SD of logged Data	1.068

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.86	95% Adjusted-CLT UCL (Chen-1995)	54.9
		95% Modified-t UCL (Johnson-1978)	49.65

Nonparametric Distribution Free UCLs

95% CLT UCL	43.45	95% Jackknife UCL	47.86
95% Standard Bootstrap UCL	41.73	95% Bootstrap-t UCL	94.96
95% Hall's Bootstrap UCL	144.3	95% Percentile Bootstrap UCL	45.56
95% BCA Bootstrap UCL	49.57		
90% Chebyshev(Mean, Sd) UCL	59.61	95% Chebyshev(Mean, Sd) UCL	75.81
97.5% Chebyshev(Mean, Sd) UCL	98.3	99% Chebyshev(Mean, Sd) UCL	142.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:32:20 AM
From File	04082B.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.6	Mean	16.73
Maximum	19.9	Median	16.75
SD	1.938	Std. Error of Mean	0.791
Coefficient of Variation	0.116	Skewness	0.674
Mean of logged Data	2.812	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.33	95% Adjusted-CLT UCL (Chen-1995)	18.27
		95% Modified-t UCL (Johnson-1978)	18.36

Nonparametric Distribution Free UCLs

95% CLT UCL	18.03	95% Jackknife UCL	18.33
95% Standard Bootstrap UCL	17.93	95% Bootstrap-t UCL	18.62
95% Hall's Bootstrap UCL	18.45	95% Percentile Bootstrap UCL	17.97
95% BCA Bootstrap UCL	18.1		
90% Chebyshev(Mean, Sd) UCL	19.11	95% Chebyshev(Mean, Sd) UCL	20.18
97.5% Chebyshev(Mean, Sd) UCL	21.67	99% Chebyshev(Mean, Sd) UCL	24.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.2	Mean	11.65
Maximum	17.3	Median	10.45
SD	2.791	Std. Error of Mean	1.139
Coefficient of Variation	0.24	Skewness	2.365
Mean of logged Data	2.436	SD of logged Data	0.206

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.95	95% Adjusted-CLT UCL (Chen-1995)	14.7
		95% Modified-t UCL (Johnson-1978)	14.13

Nonparametric Distribution Free UCLs

95% CLT UCL	13.52	95% Jackknife UCL	13.95
95% Standard Bootstrap UCL	13.34	95% Bootstrap-t UCL	41.99
95% Hall's Bootstrap UCL	26.36	95% Percentile Bootstrap UCL	13.82
95% BCA Bootstrap UCL	14		
90% Chebyshev(Mean, Sd) UCL	15.07	95% Chebyshev(Mean, Sd) UCL	16.62
97.5% Chebyshev(Mean, Sd) UCL	18.76	99% Chebyshev(Mean, Sd) UCL	22.99

Suggested UCL to Use

95% Student's-t UCL	13.95	or 95% Modified-t UCL	14.13

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	46.6	Mean	62.53
Maximum	74.3	Median	65.9
SD	12.64	Std. Error of Mean	5.159
Coefficient of Variation	0.202	Skewness	-0.38
Mean of logged Data	4.118	SD of logged Data	0.211

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	72.93	95% Adjusted-CLT UCL (Chen-1995)	70.16
		95% Modified-t UCL (Johnson-1978)	72.8

Nonparametric Distribution Free UCLs

95% CLT UCL	71.02	95% Jackknife UCL	72.93
95% Standard Bootstrap UCL	70.39	95% Bootstrap-t UCL	72.21
95% Hall's Bootstrap UCL	67.99	95% Percentile Bootstrap UCL	70.6
95% BCA Bootstrap UCL	69.95		
90% Chebyshev(Mean, Sd) UCL	78.01	95% Chebyshev(Mean, Sd) UCL	85.02
97.5% Chebyshev(Mean, Sd) UCL	94.75	99% Chebyshev(Mean, Sd) UCL	113.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.33	Mean	1.673
Maximum	2	Median	1.67
SD	0.344	Std. Error of Mean	0.14
Coefficient of Variation	0.206	Skewness	-0.00255
Mean of logged Data	0.497	SD of logged Data	0.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.956	95% Adjusted-CLT UCL (Chen-1995)	1.904
		95% Modified-t UCL (Johnson-1978)	1.956

Nonparametric Distribution Free UCLs

95% CLT UCL	1.904	95% Jackknife UCL	1.956
95% Standard Bootstrap UCL	1.885	95% Bootstrap-t UCL	1.951
95% Hall's Bootstrap UCL	1.787	95% Percentile Bootstrap UCL	1.883
95% BCA Bootstrap UCL	1.882		
90% Chebyshev(Mean, Sd) UCL	2.095	95% Chebyshev(Mean, Sd) UCL	2.285
97.5% Chebyshev(Mean, Sd) UCL	2.55	99% Chebyshev(Mean, Sd) UCL	3.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.52	Mean	0.528
Maximum	0.535	Median	0.528
SD	0.00524	Std. Error of Mean	0.00214
Coefficient of Variation	0.00994	Skewness	4.747E-14
Mean of logged Data	-0.64	SD of logged Data	0.00994

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.532	95% Adjusted-CLT UCL (Chen-1995)	0.531
		95% Modified-t UCL (Johnson-1978)	0.532

Nonparametric Distribution Free UCLs

95% CLT UCL	0.531	95% Jackknife UCL	0.532
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.534	95% Chebyshev(Mean, Sd) UCL	0.537
97.5% Chebyshev(Mean, Sd) UCL	0.541	99% Chebyshev(Mean, Sd) UCL	0.549

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.12	Mean	2.14
Maximum	2.165	Median	2.135
SD	0.0195	Std. Error of Mean	0.00796
Coefficient of Variation	0.00911	Skewness	0.364
Mean of logged Data	0.761	SD of logged Data	0.0091

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.156	95% Adjusted-CLT UCL (Chen-1995)	2.154
		95% Modified-t UCL (Johnson-1978)	2.156

Nonparametric Distribution Free UCLs

95% CLT UCL	2.153	95% Jackknife UCL	2.156
95% Standard Bootstrap UCL	2.152	95% Bootstrap-t UCL	2.156
95% Hall's Bootstrap UCL	2.151	95% Percentile Bootstrap UCL	2.153
95% BCA Bootstrap UCL	2.152		
90% Chebyshev(Mean, Sd) UCL	2.164	95% Chebyshev(Mean, Sd) UCL	2.175
97.5% Chebyshev(Mean, Sd) UCL	2.19	99% Chebyshev(Mean, Sd) UCL	2.219

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.12	Mean	2.343
Maximum	3.38	Median	2.135
SD	0.508	Std. Error of Mean	0.208
Coefficient of Variation	0.217	Skewness	2.445
Mean of logged Data	0.835	SD of logged Data	0.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.761	95% Adjusted-CLT UCL (Chen-1995)	2.905
		95% Modified-t UCL (Johnson-1978)	2.795

Nonparametric Distribution Free UCLs

95% CLT UCL	2.684	95% Jackknife UCL	2.761
95% Standard Bootstrap UCL	2.647	95% Bootstrap-t UCL	13.4
95% Hall's Bootstrap UCL	9.886	95% Percentile Bootstrap UCL	2.754
95% BCA Bootstrap UCL	2.764		
90% Chebyshev(Mean, Sd) UCL	2.965	95% Chebyshev(Mean, Sd) UCL	3.247
97.5% Chebyshev(Mean, Sd) UCL	3.639	99% Chebyshev(Mean, Sd) UCL	4.408

Suggested UCL to Use

95% Student's-t UCL	2.761	or 95% Modified-t UCL	2.795

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.74	Mean	2.25
Maximum	3.21	Median	2.135
SD	0.497	Std. Error of Mean	0.203
Coefficient of Variation	0.221	Skewness	1.827
Mean of logged Data	0.793	SD of logged Data	0.201

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.659	95% Adjusted-CLT UCL (Chen-1995)	2.745
		95% Modified-t UCL (Johnson-1978)	2.684

Nonparametric Distribution Free UCLs

95% CLT UCL	2.584	95% Jackknife UCL	2.659
95% Standard Bootstrap UCL	2.56	95% Bootstrap-t UCL	5.674
95% Hall's Bootstrap UCL	5.067	95% Percentile Bootstrap UCL	2.606
95% BCA Bootstrap UCL	2.673		
90% Chebyshev(Mean, Sd) UCL	2.858	95% Chebyshev(Mean, Sd) UCL	3.134
97.5% Chebyshev(Mean, Sd) UCL	3.516	99% Chebyshev(Mean, Sd) UCL	4.267

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.76	Mean	3.778
Maximum	5.78	Median	3.453
SD	1.056	Std. Error of Mean	0.431
Coefficient of Variation	0.28	Skewness	1.719
Mean of logged Data	1.301	SD of logged Data	0.252

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.646	95% Adjusted-CLT UCL (Chen-1995)	4.81
		95% Modified-t UCL (Johnson-1978)	4.697

Nonparametric Distribution Free UCLs

95% CLT UCL	4.487	95% Jackknife UCL	4.646
95% Standard Bootstrap UCL	4.438	95% Bootstrap-t UCL	5.745
95% Hall's Bootstrap UCL	8.324	95% Percentile Bootstrap UCL	4.501
95% BCA Bootstrap UCL	4.648		
90% Chebyshev(Mean, Sd) UCL	5.071	95% Chebyshev(Mean, Sd) UCL	5.657
97.5% Chebyshev(Mean, Sd) UCL	6.47	99% Chebyshev(Mean, Sd) UCL	8.067

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.41	Mean	3.068
Maximum	3.325	Median	3.245
SD	0.354	Std. Error of Mean	0.145
Coefficient of Variation	0.116	Skewness	-1.694
Mean of logged Data	1.115	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.359	95% Adjusted-CLT UCL (Chen-1995)	3.199
		95% Modified-t UCL (Johnson-1978)	3.342

Nonparametric Distribution Free UCLs

95% CLT UCL	3.305	95% Jackknife UCL	3.359
95% Standard Bootstrap UCL	3.282	95% Bootstrap-t UCL	3.265
95% Hall's Bootstrap UCL	3.218	95% Percentile Bootstrap UCL	3.266
95% BCA Bootstrap UCL	3.225		
90% Chebyshev(Mean, Sd) UCL	3.502	95% Chebyshev(Mean, Sd) UCL	3.698
97.5% Chebyshev(Mean, Sd) UCL	3.971	99% Chebyshev(Mean, Sd) UCL	4.507

Suggested UCL to Use

95% Student's-t UCL	3.359	or 95% Modified-t UCL	3.342

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.12	Mean	2.274
Maximum	2.97	Median	2.135
SD	0.341	Std. Error of Mean	0.139
Coefficient of Variation	0.15	Skewness	2.439
Mean of logged Data	0.813	SD of logged Data	0.135

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.555	95% Adjusted-CLT UCL (Chen-1995)	2.651
		95% Modified-t UCL (Johnson-1978)	2.578

Nonparametric Distribution Free UCLs

95% CLT UCL	2.503	95% Jackknife UCL	2.555
95% Standard Bootstrap UCL	2.483	95% Bootstrap-t UCL	6.663
95% Hall's Bootstrap UCL	5.504	95% Percentile Bootstrap UCL	2.549
95% BCA Bootstrap UCL	2.688		
90% Chebyshev(Mean, Sd) UCL	2.692	95% Chebyshev(Mean, Sd) UCL	2.881
97.5% Chebyshev(Mean, Sd) UCL	3.144	99% Chebyshev(Mean, Sd) UCL	3.66

Suggested UCL to Use

95% Student's-t UCL	2.555	or 95% Modified-t UCL	2.578

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.125	Mean	3.548
Maximum	5.44	Median	3.67
SD	1.274	Std. Error of Mean	0.52
Coefficient of Variation	0.359	Skewness	0.228
Mean of logged Data	1.209	SD of logged Data	0.377

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.595	95% Adjusted-CLT UCL (Chen-1995)	4.454
		95% Modified-t UCL (Johnson-1978)	4.603

Nonparametric Distribution Free UCLs

95% CLT UCL	4.403	95% Jackknife UCL	4.595
95% Standard Bootstrap UCL	4.326	95% Bootstrap-t UCL	4.611
95% Hall's Bootstrap UCL	4.419	95% Percentile Bootstrap UCL	4.315
95% BCA Bootstrap UCL	4.358		
90% Chebyshev(Mean, Sd) UCL	5.107	95% Chebyshev(Mean, Sd) UCL	5.814
97.5% Chebyshev(Mean, Sd) UCL	6.794	99% Chebyshev(Mean, Sd) UCL	8.721

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.26	Mean	3.293
Maximum	3.335	Median	3.285
SD	0.0316	Std. Error of Mean	0.0129
Coefficient of Variation	0.00959	Skewness	0.4
Mean of logged Data	1.192	SD of logged Data	0.00957

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.319	95% Adjusted-CLT UCL (Chen-1995)	3.317
		95% Modified-t UCL (Johnson-1978)	3.32

Nonparametric Distribution Free UCLs

95% CLT UCL	3.315	95% Jackknife UCL	3.319
95% Standard Bootstrap UCL	3.312	95% Bootstrap-t UCL	3.322
95% Hall's Bootstrap UCL	3.31	95% Percentile Bootstrap UCL	3.313
95% BCA Bootstrap UCL	3.312		
90% Chebyshev(Mean, Sd) UCL	3.332	95% Chebyshev(Mean, Sd) UCL	3.35
97.5% Chebyshev(Mean, Sd) UCL	3.374	99% Chebyshev(Mean, Sd) UCL	3.422

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.125	Mean	3.613
Maximum	5.48	Median	3.468
SD	1.62	Std. Error of Mean	0.661
Coefficient of Variation	0.448	Skewness	0.0847
Mean of logged Data	1.194	SD of logged Data	0.472

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.946	95% Adjusted-CLT UCL (Chen-1995)	4.725
		95% Modified-t UCL (Johnson-1978)	4.949

Nonparametric Distribution Free UCLs

95% CLT UCL	4.701	95% Jackknife UCL	4.946
95% Standard Bootstrap UCL	4.587	95% Bootstrap-t UCL	5.011
95% Hall's Bootstrap UCL	4.167	95% Percentile Bootstrap UCL	4.608
95% BCA Bootstrap UCL	4.608		
90% Chebyshev(Mean, Sd) UCL	5.597	95% Chebyshev(Mean, Sd) UCL	6.495
97.5% Chebyshev(Mean, Sd) UCL	7.742	99% Chebyshev(Mean, Sd) UCL	10.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.305	Mean	1.318
Maximum	1.335	Median	1.315
SD	0.0121	Std. Error of Mean	0.00494
Coefficient of Variation	0.00919	Skewness	0.455
Mean of logged Data	0.276	SD of logged Data	0.00917

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.328	95% Adjusted-CLT UCL (Chen-1995)	1.327
		95% Modified-t UCL (Johnson-1978)	1.328

Nonparametric Distribution Free UCLs

95% CLT UCL	1.326	95% Jackknife UCL	1.328
95% Standard Bootstrap UCL	1.326	95% Bootstrap-t UCL	1.337
95% Hall's Bootstrap UCL	1.328	95% Percentile Bootstrap UCL	1.326
95% BCA Bootstrap UCL	1.328		
90% Chebyshev(Mean, Sd) UCL	1.333	95% Chebyshev(Mean, Sd) UCL	1.34
97.5% Chebyshev(Mean, Sd) UCL	1.349	99% Chebyshev(Mean, Sd) UCL	1.368

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.26	Mean	3.293
Maximum	3.335	Median	3.285
SD	0.0316	Std. Error of Mean	0.0129
Coefficient of Variation	0.00959	Skewness	0.4
Mean of logged Data	1.192	SD of logged Data	0.00957

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.319	95% Adjusted-CLT UCL (Chen-1995)	3.317
		95% Modified-t UCL (Johnson-1978)	3.32

Nonparametric Distribution Free UCLs

95% CLT UCL	3.315	95% Jackknife UCL	3.319
95% Standard Bootstrap UCL	3.312	95% Bootstrap-t UCL	3.323
95% Hall's Bootstrap UCL	3.311	95% Percentile Bootstrap UCL	3.313
95% BCA Bootstrap UCL	3.311		
90% Chebyshev(Mean, Sd) UCL	3.332	95% Chebyshev(Mean, Sd) UCL	3.35
97.5% Chebyshev(Mean, Sd) UCL	3.374	99% Chebyshev(Mean, Sd) UCL	3.422

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.98	Mean	1.237
Maximum	1.58	Median	1.165
SD	0.279	Std. Error of Mean	0.114
Coefficient of Variation	0.226	Skewness	0.318
Mean of logged Data	0.191	SD of logged Data	0.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.467	95% Adjusted-CLT UCL (Chen-1995)	1.44

		95% Modified-t UCL (Johnson-1978)	1.469

Nonparametric Distribution Free UCLs

95% CLT UCL	1.424	95% Jackknife UCL	1.467
95% Standard Bootstrap UCL	1.408	95% Bootstrap-t UCL	1.446
95% Hall's Bootstrap UCL	1.361	95% Percentile Bootstrap UCL	1.413
95% BCA Bootstrap UCL	1.417		
90% Chebyshev(Mean, Sd) UCL	1.579	95% Chebyshev(Mean, Sd) UCL	1.734
97.5% Chebyshev(Mean, Sd) UCL	1.949	99% Chebyshev(Mean, Sd) UCL	2.372

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.4	Mean	3.025
Maximum	3.335	Median	3.265
SD	0.426	Std. Error of Mean	0.174
Coefficient of Variation	0.141	Skewness	-1.008
Mean of logged Data	1.098	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.376	95% Adjusted-CLT UCL (Chen-1995)	3.235
		95% Modified-t UCL (Johnson-1978)	3.364

Nonparametric Distribution Free UCLs

95% CLT UCL	3.311	95% Jackknife UCL	3.376
95% Standard Bootstrap UCL	3.283	95% Bootstrap-t UCL	3.299
95% Hall's Bootstrap UCL	3.197	95% Percentile Bootstrap UCL	3.296
95% BCA Bootstrap UCL	3.288		
90% Chebyshev(Mean, Sd) UCL	3.547	95% Chebyshev(Mean, Sd) UCL	3.783
97.5% Chebyshev(Mean, Sd) UCL	4.112	99% Chebyshev(Mean, Sd) UCL	4.756

Suggested UCL to Use

95% Student's-t UCL	3.376	or 95% Modified-t UCL	3.364

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.26	Mean	3.838
Maximum	6.54	Median	3.313
SD	1.324	Std. Error of Mean	0.54
Coefficient of Variation	0.345	Skewness	2.447
Mean of logged Data	1.307	SD of logged Data	0.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.927	95% Adjusted-CLT UCL (Chen-1995)	5.304
		95% Modified-t UCL (Johnson-1978)	5.017

Nonparametric Distribution Free UCLs

95% CLT UCL	4.727	95% Jackknife UCL	4.927
95% Standard Bootstrap UCL	4.651	95% Bootstrap-t UCL	33.55
95% Hall's Bootstrap UCL	25.55	95% Percentile Bootstrap UCL	4.911
95% BCA Bootstrap UCL	4.936		
90% Chebyshev(Mean, Sd) UCL	5.46	95% Chebyshev(Mean, Sd) UCL	6.194
97.5% Chebyshev(Mean, Sd) UCL	7.214	99% Chebyshev(Mean, Sd) UCL	9.216

Suggested UCL to Use

95% Student's-t UCL	4.927	or 95% Modified-t UCL	5.017

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:33:58 AM
From File	04126.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.8	Mean	17.4
Maximum	21	Median	17.9
SD	3.66	Std. Error of Mean	1.494
Coefficient of Variation	0.21	Skewness	-0.211
Mean of logged Data	2.837	SD of logged Data	0.217

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.41	95% Adjusted-CLT UCL (Chen-1995)	19.72
		95% Modified-t UCL (Johnson-1978)	20.39

Nonparametric Distribution Free UCLs

95% CLT UCL	19.86	95% Jackknife UCL	20.41
95% Standard Bootstrap UCL	19.64	95% Bootstrap-t UCL	20.31
95% Hall's Bootstrap UCL	18.91	95% Percentile Bootstrap UCL	19.67
95% BCA Bootstrap UCL	19.6		
90% Chebyshev(Mean, Sd) UCL	21.88	95% Chebyshev(Mean, Sd) UCL	23.91
97.5% Chebyshev(Mean, Sd) UCL	26.73	99% Chebyshev(Mean, Sd) UCL	32.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.7	Mean	15.93
Maximum	20	Median	16
SD	4.103	Std. Error of Mean	1.675
Coefficient of Variation	0.258	Skewness	-0.0106

Mean of logged Data	2.74	SD of logged Data	0.263

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.31	95% Adjusted-CLT UCL (Chen-1995)	18.68
		95% Modified-t UCL (Johnson-1978)	19.31

Nonparametric Distribution Free UCLs

95% CLT UCL	18.69	95% Jackknife UCL	19.31
95% Standard Bootstrap UCL	18.46	95% Bootstrap-t UCL	19.38
95% Hall's Bootstrap UCL	17.33	95% Percentile Bootstrap UCL	18.48
95% BCA Bootstrap UCL	18.42		
90% Chebyshev(Mean, Sd) UCL	20.96	95% Chebyshev(Mean, Sd) UCL	23.23
97.5% Chebyshev(Mean, Sd) UCL	26.39	99% Chebyshev(Mean, Sd) UCL	32.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	56.9	Mean	97.32
Maximum	127	Median	107
SD	31.39	Std. Error of Mean	12.81
Coefficient of Variation	0.323	Skewness	-0.642
Mean of logged Data	4.527	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	123.1	95% Adjusted-CLT UCL (Chen-1995)	114.8
		95% Modified-t UCL (Johnson-1978)	122.6

Nonparametric Distribution Free UCLs

95% CLT UCL	118.4	95% Jackknife UCL	123.1
95% Standard Bootstrap UCL	116.4	95% Bootstrap-t UCL	117.8
95% Hall's Bootstrap UCL	110.4	95% Percentile Bootstrap UCL	115.5
95% BCA Bootstrap UCL	114.2		

90% Chebyshev(Mean, Sd) UCL	135.8	95% Chebyshev(Mean, Sd) UCL	153.2
97.5% Chebyshev(Mean, Sd) UCL	177.3	99% Chebyshev(Mean, Sd) UCL	224.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.29	Mean	2.175
Maximum	3	Median	2.035
SD	0.652	Std. Error of Mean	0.266
Coefficient of Variation	0.3	Skewness	0.141
Mean of logged Data	0.738	SD of logged Data	0.313

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.711	95% Adjusted-CLT UCL (Chen-1995)	2.629
		95% Modified-t UCL (Johnson-1978)	2.714

Nonparametric Distribution Free UCLs

95% CLT UCL	2.613	95% Jackknife UCL	2.711
95% Standard Bootstrap UCL	2.575	95% Bootstrap-t UCL	2.863
95% Hall's Bootstrap UCL	3.196	95% Percentile Bootstrap UCL	2.587
95% BCA Bootstrap UCL	2.595		
90% Chebyshev(Mean, Sd) UCL	2.973	95% Chebyshev(Mean, Sd) UCL	3.334
97.5% Chebyshev(Mean, Sd) UCL	3.836	99% Chebyshev(Mean, Sd) UCL	4.822

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.478	Mean	0.512
Maximum	0.53	Median	0.52

SD	0.0198	Std. Error of Mean	0.00807
Coefficient of Variation	0.0386	Skewness	-1.328
Mean of logged Data	-0.67	SD of logged Data	0.0393

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.528	95% Adjusted-CLT UCL (Chen-1995)	0.521
		95% Modified-t UCL (Johnson-1978)	0.528

Nonparametric Distribution Free UCLs

95% CLT UCL	0.525	95% Jackknife UCL	0.528
95% Standard Bootstrap UCL	0.524	95% Bootstrap-t UCL	0.524
95% Hall's Bootstrap UCL	0.52	95% Percentile Bootstrap UCL	0.523
95% BCA Bootstrap UCL	0.521		
90% Chebyshev(Mean, Sd) UCL	0.536	95% Chebyshev(Mean, Sd) UCL	0.547
97.5% Chebyshev(Mean, Sd) UCL	0.562	99% Chebyshev(Mean, Sd) UCL	0.592

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.94	Mean	2.082
Maximum	2.16	Median	2.115
SD	0.0818	Std. Error of Mean	0.0334
Coefficient of Variation	0.0393	Skewness	-1.269
Mean of logged Data	0.733	SD of logged Data	0.04

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.149	95% Adjusted-CLT UCL (Chen-1995)	2.118
		95% Modified-t UCL (Johnson-1978)	2.146

Nonparametric Distribution Free UCLs

95% CLT UCL	2.137	95% Jackknife UCL	2.149
95% Standard Bootstrap UCL	2.132	95% Bootstrap-t UCL	2.129

95% Hall's Bootstrap UCL	2.119	95% Percentile Bootstrap UCL	2.128
95% BCA Bootstrap UCL	2.12		
90% Chebyshev(Mean, Sd) UCL	2.182	95% Chebyshev(Mean, Sd) UCL	2.227
97.5% Chebyshev(Mean, Sd) UCL	2.29	99% Chebyshev(Mean, Sd) UCL	2.414

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.82	Mean	6.442
Maximum	15.2	Median	4.445
SD	5.498	Std. Error of Mean	2.244
Coefficient of Variation	0.853	Skewness	0.892
Mean of logged Data	1.526	SD of logged Data	0.915

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.96	95% Adjusted-CLT UCL (Chen-1995)	11.01
		95% Modified-t UCL (Johnson-1978)	11.1

Nonparametric Distribution Free UCLs

95% CLT UCL	10.13	95% Jackknife UCL	10.96
95% Standard Bootstrap UCL	9.815	95% Bootstrap-t UCL	13.16
95% Hall's Bootstrap UCL	12.77	95% Percentile Bootstrap UCL	10.03
95% BCA Bootstrap UCL	10.13		
90% Chebyshev(Mean, Sd) UCL	13.17	95% Chebyshev(Mean, Sd) UCL	16.22
97.5% Chebyshev(Mean, Sd) UCL	20.46	99% Chebyshev(Mean, Sd) UCL	28.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1.69	Mean	6.697
Maximum	15.6	Median	5.22
SD	5.709	Std. Error of Mean	2.331
Coefficient of Variation	0.853	Skewness	0.726
Mean of logged Data	1.536	SD of logged Data	0.973

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.39	95% Adjusted-CLT UCL (Chen-1995)	11.27
		95% Modified-t UCL (Johnson-1978)	11.51

Nonparametric Distribution Free UCLs

95% CLT UCL	10.53	95% Jackknife UCL	11.39
95% Standard Bootstrap UCL	10.32	95% Bootstrap-t UCL	15.13
95% Hall's Bootstrap UCL	10.02	95% Percentile Bootstrap UCL	10.35
95% BCA Bootstrap UCL	10.78		
90% Chebyshev(Mean, Sd) UCL	13.69	95% Chebyshev(Mean, Sd) UCL	16.86
97.5% Chebyshev(Mean, Sd) UCL	21.25	99% Chebyshev(Mean, Sd) UCL	29.89

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.07	Mean	10.97
Maximum	24.7	Median	8.68
SD	8.913	Std. Error of Mean	3.639
Coefficient of Variation	0.813	Skewness	0.684
Mean of logged Data	2.071	SD of logged Data	0.911

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.3	95% Adjusted-CLT UCL (Chen-1995)	18.04
		95% Modified-t UCL (Johnson-1978)	18.47

Nonparametric Distribution Free UCLs

95% CLT UCL	16.95	95% Jackknife UCL	18.3
95% Standard Bootstrap UCL	16.39	95% Bootstrap-t UCL	23.81
95% Hall's Bootstrap UCL	16.25	95% Percentile Bootstrap UCL	16.68

95% BCA Bootstrap UCL	16.68		
90% Chebyshev(Mean, Sd) UCL	21.88	95% Chebyshev(Mean, Sd) UCL	26.83
97.5% Chebyshev(Mean, Sd) UCL	33.69	99% Chebyshev(Mean, Sd) UCL	47.17

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.125	Mean	5.562
Maximum	10.5	Median	4.695
SD	2.943	Std. Error of Mean	1.201
Coefficient of Variation	0.529	Skewness	1.015
Mean of logged Data	1.606	SD of logged Data	0.507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.982	95% Adjusted-CLT UCL (Chen-1995)	8.07
		95% Modified-t UCL (Johnson-1978)	8.065

Nonparametric Distribution Free UCLs

95% CLT UCL	7.538	95% Jackknife UCL	7.982
95% Standard Bootstrap UCL	7.424	95% Bootstrap-t UCL	8.739
95% Hall's Bootstrap UCL	7.948	95% Percentile Bootstrap UCL	7.508
95% BCA Bootstrap UCL	7.966		
90% Chebyshev(Mean, Sd) UCL	9.166	95% Chebyshev(Mean, Sd) UCL	10.8
97.5% Chebyshev(Mean, Sd) UCL	13.06	99% Chebyshev(Mean, Sd) UCL	17.51

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	4.484
Maximum	8.64	Median	3.615
SD	2.844	Std. Error of Mean	1.161
Coefficient of Variation	0.634	Skewness	0.59

Mean of logged Data	1.323	SD of logged Data	0.658

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.824	95% Adjusted-CLT UCL (Chen-1995)	6.693
		95% Modified-t UCL (Johnson-1978)	6.87

Nonparametric Distribution Free UCLs

95% CLT UCL	6.394	95% Jackknife UCL	6.824
95% Standard Bootstrap UCL	6.242	95% Bootstrap-t UCL	7.074
95% Hall's Bootstrap UCL	6.328	95% Percentile Bootstrap UCL	6.272
95% BCA Bootstrap UCL	6.374		
90% Chebyshev(Mean, Sd) UCL	7.967	95% Chebyshev(Mean, Sd) UCL	9.545
97.5% Chebyshev(Mean, Sd) UCL	11.73	99% Chebyshev(Mean, Sd) UCL	16.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.73	Mean	9.64
Maximum	22.7	Median	7.46
SD	8.181	Std. Error of Mean	3.34
Coefficient of Variation	0.849	Skewness	0.8
Mean of logged Data	1.915	SD of logged Data	0.946

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.37	95% Adjusted-CLT UCL (Chen-1995)	16.3
		95% Modified-t UCL (Johnson-1978)	16.55

Nonparametric Distribution Free UCLs

95% CLT UCL	15.13	95% Jackknife UCL	16.37
95% Standard Bootstrap UCL	14.66	95% Bootstrap-t UCL	17.76
95% Hall's Bootstrap UCL	14.27	95% Percentile Bootstrap UCL	14.86
95% BCA Bootstrap UCL	15		
90% Chebyshev(Mean, Sd) UCL	19.66	95% Chebyshev(Mean, Sd) UCL	24.2
97.5% Chebyshev(Mean, Sd) UCL	30.5	99% Chebyshev(Mean, Sd) UCL	42.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.91	Mean	3.145
Maximum	3.32	Median	3.19
SD	0.168	Std. Error of Mean	0.0685
Coefficient of Variation	0.0534	Skewness	-0.52
Mean of logged Data	1.145	SD of logged Data	0.0539

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.283	95% Adjusted-CLT UCL (Chen-1995)	3.242
		95% Modified-t UCL (Johnson-1978)	3.281

Nonparametric Distribution Free UCLs

95% CLT UCL	3.258	95% Jackknife UCL	3.283
95% Standard Bootstrap UCL	3.248	95% Bootstrap-t UCL	3.258
95% Hall's Bootstrap UCL	3.226	95% Percentile Bootstrap UCL	3.251
95% BCA Bootstrap UCL	3.237		
90% Chebyshev(Mean, Sd) UCL	3.351	95% Chebyshev(Mean, Sd) UCL	3.444
97.5% Chebyshev(Mean, Sd) UCL	3.573	99% Chebyshev(Mean, Sd) UCL	3.827

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.11	Mean	10.89
Maximum	25.6	Median	8.62
SD	8.798	Std. Error of Mean	3.592
Coefficient of Variation	0.808	Skewness	0.985
Mean of logged Data	2.094	SD of logged Data	0.856

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.13	95% Adjusted-CLT UCL (Chen-1995)	18.34
		95% Modified-t UCL (Johnson-1978)	18.37

Nonparametric Distribution Free UCLs

95% CLT UCL	16.8	95% Jackknife UCL	18.13
95% Standard Bootstrap UCL	16.28	95% Bootstrap-t UCL	20.53
95% Hall's Bootstrap UCL	17.65	95% Percentile Bootstrap UCL	16.45
95% BCA Bootstrap UCL	16.93		
90% Chebyshev(Mean, Sd) UCL	21.66	95% Chebyshev(Mean, Sd) UCL	26.54
97.5% Chebyshev(Mean, Sd) UCL	33.32	99% Chebyshev(Mean, Sd) UCL	46.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.974	Mean	1.262
Maximum	1.78	Median	1.195
SD	0.304	Std. Error of Mean	0.124
Coefficient of Variation	0.241	Skewness	1.06
Mean of logged Data	0.21	SD of logged Data	0.229

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.513	95% Adjusted-CLT UCL (Chen-1995)	1.524
		95% Modified-t UCL (Johnson-1978)	1.522

Nonparametric Distribution Free UCLs

95% CLT UCL	1.467	95% Jackknife UCL	1.513
95% Standard Bootstrap UCL	1.444	95% Bootstrap-t UCL	1.682
95% Hall's Bootstrap UCL	2.634	95% Percentile Bootstrap UCL	1.457
95% BCA Bootstrap UCL	1.478		
90% Chebyshev(Mean, Sd) UCL	1.635	95% Chebyshev(Mean, Sd) UCL	1.804
97.5% Chebyshev(Mean, Sd) UCL	2.038	99% Chebyshev(Mean, Sd) UCL	2.499

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.22	Mean	6.048
Maximum	12.9	Median	4.978
SD	4.063	Std. Error of Mean	1.659
Coefficient of Variation	0.672	Skewness	1.018
Mean of logged Data	1.611	SD of logged Data	0.675

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.391	95% Adjusted-CLT UCL (Chen-1995)	9.513
		95% Modified-t UCL (Johnson-1978)	9.506

Nonparametric Distribution Free UCLs

95% CLT UCL	8.777	95% Jackknife UCL	9.391
95% Standard Bootstrap UCL	8.477	95% Bootstrap-t UCL	10.5
95% Hall's Bootstrap UCL	9.087	95% Percentile Bootstrap UCL	8.711
95% BCA Bootstrap UCL	8.998		
90% Chebyshev(Mean, Sd) UCL	11.02	95% Chebyshev(Mean, Sd) UCL	13.28
97.5% Chebyshev(Mean, Sd) UCL	16.41	99% Chebyshev(Mean, Sd) UCL	22.55

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.65	Mean	4.217
Maximum	5.73	Median	4.31
SD	1.196	Std. Error of Mean	0.488
Coefficient of Variation	0.284	Skewness	-0.149
Mean of logged Data	1.403	SD of logged Data	0.301

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.201	95% Adjusted-CLT UCL (Chen-1995)	4.988
		95% Modified-t UCL (Johnson-1978)	5.196

Nonparametric Distribution Free UCLs

95% CLT UCL	5.02	95% Jackknife UCL	5.201
95% Standard Bootstrap UCL	4.961	95% Bootstrap-t UCL	5.133
95% Hall's Bootstrap UCL	5.017	95% Percentile Bootstrap UCL	4.957
95% BCA Bootstrap UCL	4.948		
90% Chebyshev(Mean, Sd) UCL	5.682	95% Chebyshev(Mean, Sd) UCL	6.345
97.5% Chebyshev(Mean, Sd) UCL	7.266	99% Chebyshev(Mean, Sd) UCL	9.076

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.32	Mean	6.173
Maximum	11.4	Median	5.71
SD	3.039	Std. Error of Mean	1.241
Coefficient of Variation	0.492	Skewness	1.061
Mean of logged Data	1.724	SD of logged Data	0.477

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.674	95% Adjusted-CLT UCL (Chen-1995)	8.789
		95% Modified-t UCL (Johnson-1978)	8.763

Nonparametric Distribution Free UCLs

95% CLT UCL	8.214	95% Jackknife UCL	8.674
95% Standard Bootstrap UCL	8.062	95% Bootstrap-t UCL	10.01
95% Hall's Bootstrap UCL	11.66	95% Percentile Bootstrap UCL	8.157
95% BCA Bootstrap UCL	8.433		
90% Chebyshev(Mean, Sd) UCL	9.896	95% Chebyshev(Mean, Sd) UCL	11.58
97.5% Chebyshev(Mean, Sd) UCL	13.92	99% Chebyshev(Mean, Sd) UCL	18.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.54	Mean	9.423
Maximum	22.3	Median	7.255
SD	7.799	Std. Error of Mean	3.184
Coefficient of Variation	0.828	Skewness	0.933
Mean of logged Data	1.926	SD of logged Data	0.893

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.84	95% Adjusted-CLT UCL (Chen-1995)	15.96
		95% Modified-t UCL (Johnson-1978)	16.04

Nonparametric Distribution Free UCLs

95% CLT UCL	14.66	95% Jackknife UCL	15.84
95% Standard Bootstrap UCL	14.22	95% Bootstrap-t UCL	17.71
95% Hall's Bootstrap UCL	15.06	95% Percentile Bootstrap UCL	14.26
95% BCA Bootstrap UCL	14.6		
90% Chebyshev(Mean, Sd) UCL	18.98	95% Chebyshev(Mean, Sd) UCL	23.3
97.5% Chebyshev(Mean, Sd) UCL	29.31	99% Chebyshev(Mean, Sd) UCL	41.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:35:03 AM
From File	04127.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.9	Mean	17.43
Maximum	19.2	Median	17.7
SD	1.776	Std. Error of Mean	0.725
Coefficient of Variation	0.102	Skewness	-0.401
Mean of logged Data	2.854	SD of logged Data	0.104

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.89	95% Adjusted-CLT UCL (Chen-1995)	18.5
		95% Modified-t UCL (Johnson-1978)	18.87

Nonparametric Distribution Free UCLs

95% CLT UCL	18.63	95% Jackknife UCL	18.89
95% Standard Bootstrap UCL	18.51	95% Bootstrap-t UCL	18.79
95% Hall's Bootstrap UCL	18.28	95% Percentile Bootstrap UCL	18.55
95% BCA Bootstrap UCL	18.52		
90% Chebyshev(Mean, Sd) UCL	19.61	95% Chebyshev(Mean, Sd) UCL	20.59
97.5% Chebyshev(Mean, Sd) UCL	21.96	99% Chebyshev(Mean, Sd) UCL	24.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	13.5	Mean	20.75
Maximum	27.6	Median	22.6
SD	5.454	Std. Error of Mean	2.227
Coefficient of Variation	0.263	Skewness	-0.442

Mean of logged Data	3.001	SD of logged Data	0.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.24	95% Adjusted-CLT UCL (Chen-1995)	23.98
		95% Modified-t UCL (Johnson-1978)	25.17

Nonparametric Distribution Free UCLs

95% CLT UCL	24.41	95% Jackknife UCL	25.24
95% Standard Bootstrap UCL	24.05	95% Bootstrap-t UCL	24.97
95% Hall's Bootstrap UCL	23.55	95% Percentile Bootstrap UCL	23.93
95% BCA Bootstrap UCL	23.7		
90% Chebyshev(Mean, Sd) UCL	27.43	95% Chebyshev(Mean, Sd) UCL	30.46
97.5% Chebyshev(Mean, Sd) UCL	34.66	99% Chebyshev(Mean, Sd) UCL	42.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	56.7	Mean	92.83
Maximum	129	Median	90.35
SD	33.23	Std. Error of Mean	13.57
Coefficient of Variation	0.358	Skewness	0.0397
Mean of logged Data	4.474	SD of logged Data	0.372

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	120.2	95% Adjusted-CLT UCL (Chen-1995)	115.4
		95% Modified-t UCL (Johnson-1978)	120.2

Nonparametric Distribution Free UCLs

95% CLT UCL	115.1	95% Jackknife UCL	120.2
95% Standard Bootstrap UCL	113.3	95% Bootstrap-t UCL	119.9
95% Hall's Bootstrap UCL	105.6	95% Percentile Bootstrap UCL	113.8
95% BCA Bootstrap UCL	112.5		

90% Chebyshev(Mean, Sd) UCL	133.5	95% Chebyshev(Mean, Sd) UCL	152
97.5% Chebyshev(Mean, Sd) UCL	177.6	99% Chebyshev(Mean, Sd) UCL	227.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.78	Mean	3.942
Maximum	7.75	Median	3.09
SD	2.203	Std. Error of Mean	0.899
Coefficient of Variation	0.559	Skewness	1.237
Mean of logged Data	1.252	SD of logged Data	0.526

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.754	95% Adjusted-CLT UCL (Chen-1995)	5.906
		95% Modified-t UCL (Johnson-1978)	5.83

Nonparametric Distribution Free UCLs

95% CLT UCL	5.421	95% Jackknife UCL	5.754
95% Standard Bootstrap UCL	5.273	95% Bootstrap-t UCL	8.817
95% Hall's Bootstrap UCL	16.75	95% Percentile Bootstrap UCL	5.383
95% BCA Bootstrap UCL	5.688		
90% Chebyshev(Mean, Sd) UCL	6.64	95% Chebyshev(Mean, Sd) UCL	7.862
97.5% Chebyshev(Mean, Sd) UCL	9.558	99% Chebyshev(Mean, Sd) UCL	12.89

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.515	Mean	0.562
Maximum	0.736	Median	0.523
SD	0.0865	Std. Error of Mean	0.0353
Coefficient of Variation	0.154	Skewness	2.316
Mean of logged Data	-0.585	SD of logged Data	0.139

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.633	95% Adjusted-CLT UCL (Chen-1995)	0.655
		95% Modified-t UCL (Johnson-1978)	0.638

Nonparametric Distribution Free UCLs

95% CLT UCL	0.62	95% Jackknife UCL	0.633
95% Standard Bootstrap UCL	0.615	95% Bootstrap-t UCL	1.539
95% Hall's Bootstrap UCL	1.046	95% Percentile Bootstrap UCL	0.627
95% BCA Bootstrap UCL	0.635		
90% Chebyshev(Mean, Sd) UCL	0.668	95% Chebyshev(Mean, Sd) UCL	0.716
97.5% Chebyshev(Mean, Sd) UCL	0.782	99% Chebyshev(Mean, Sd) UCL	0.913

Suggested UCL to Use

95% Student's-t UCL	0.633	or 95% Modified-t UCL	0.638

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.59	Mean	2
Maximum	2.125	Median	2.103
SD	0.21	Std. Error of Mean	0.0858
Coefficient of Variation	0.105	Skewness	-2.04
Mean of logged Data	0.688	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.173	95% Adjusted-CLT UCL (Chen-1995)	2.065
		95% Modified-t UCL (Johnson-1978)	2.161

Nonparametric Distribution Free UCLs

95% CLT UCL	2.141	95% Jackknife UCL	2.173
95% Standard Bootstrap UCL	2.13	95% Bootstrap-t UCL	2.109
95% Hall's Bootstrap UCL	2.08	95% Percentile Bootstrap UCL	2.113
95% BCA Bootstrap UCL	2.09		
90% Chebyshev(Mean, Sd) UCL	2.257	95% Chebyshev(Mean, Sd) UCL	2.374
97.5% Chebyshev(Mean, Sd) UCL	2.536	99% Chebyshev(Mean, Sd) UCL	2.854

Suggested UCL to Use

95% Student's-t UCL	2.173	or 95% Modified-t UCL	2.161

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.3	Mean	16.63
Maximum	37.9	Median	13.8
SD	11.83	Std. Error of Mean	4.83
Coefficient of Variation	0.712	Skewness	1.371
Mean of logged Data	2.611	SD of logged Data	0.69

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.36	95% Adjusted-CLT UCL (Chen-1995)	27.46
		95% Modified-t UCL (Johnson-1978)	26.81

Nonparametric Distribution Free UCLs

95% CLT UCL	24.57	95% Jackknife UCL	26.36
95% Standard Bootstrap UCL	23.76	95% Bootstrap-t UCL	35
95% Hall's Bootstrap UCL	69.86	95% Percentile Bootstrap UCL	24.51
95% BCA Bootstrap UCL	27.12		
90% Chebyshev(Mean, Sd) UCL	31.11	95% Chebyshev(Mean, Sd) UCL	37.68
97.5% Chebyshev(Mean, Sd) UCL	46.79	99% Chebyshev(Mean, Sd) UCL	64.68

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.48	Mean	18.8
Maximum	43.4	Median	16.7
SD	13.72	Std. Error of Mean	5.6
Coefficient of Variation	0.73	Skewness	1.293

Mean of logged Data	2.707	SD of logged Data	0.754

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.08	95% Adjusted-CLT UCL (Chen-1995)	31.16
		95% Modified-t UCL (Johnson-1978)	30.57

Nonparametric Distribution Free UCLs

95% CLT UCL	28.01	95% Jackknife UCL	30.08
95% Standard Bootstrap UCL	27.21	95% Bootstrap-t UCL	37.21
95% Hall's Bootstrap UCL	76.03	95% Percentile Bootstrap UCL	27.71
95% BCA Bootstrap UCL	29.8		
90% Chebyshev(Mean, Sd) UCL	35.6	95% Chebyshev(Mean, Sd) UCL	43.21
97.5% Chebyshev(Mean, Sd) UCL	53.77	99% Chebyshev(Mean, Sd) UCL	74.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.36	Mean	27.63
Maximum	64.6	Median	24.05
SD	20.56	Std. Error of Mean	8.393
Coefficient of Variation	0.744	Skewness	1.318
Mean of logged Data	3.083	SD of logged Data	0.774

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.54	95% Adjusted-CLT UCL (Chen-1995)	46.26
		95% Modified-t UCL (Johnson-1978)	45.29

Nonparametric Distribution Free UCLs

95% CLT UCL	41.43	95% Jackknife UCL	44.54
95% Standard Bootstrap UCL	40.32	95% Bootstrap-t UCL	53.66
95% Hall's Bootstrap UCL	112.4	95% Percentile Bootstrap UCL	40.92
95% BCA Bootstrap UCL	42.98		
90% Chebyshev(Mean, Sd) UCL	52.8	95% Chebyshev(Mean, Sd) UCL	64.21
97.5% Chebyshev(Mean, Sd) UCL	80.04	99% Chebyshev(Mean, Sd) UCL	111.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.22	Mean	12.69
Maximum	27.9	Median	11.5
SD	8.74	Std. Error of Mean	3.568
Coefficient of Variation	0.689	Skewness	1.076
Mean of logged Data	2.323	SD of logged Data	0.759

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.88	95% Adjusted-CLT UCL (Chen-1995)	20.23
		95% Modified-t UCL (Johnson-1978)	20.14

Nonparametric Distribution Free UCLs

95% CLT UCL	18.56	95% Jackknife UCL	19.88
95% Standard Bootstrap UCL	18.07	95% Bootstrap-t UCL	22.81
95% Hall's Bootstrap UCL	54.07	95% Percentile Bootstrap UCL	18.45
95% BCA Bootstrap UCL	19.2		
90% Chebyshev(Mean, Sd) UCL	23.39	95% Chebyshev(Mean, Sd) UCL	28.24
97.5% Chebyshev(Mean, Sd) UCL	34.97	99% Chebyshev(Mean, Sd) UCL	48.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.1	Mean	11.26
Maximum	25.2	Median	10.32
SD	7.995	Std. Error of Mean	3.264
Coefficient of Variation	0.71	Skewness	1.096
Mean of logged Data	2.193	SD of logged Data	0.77

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.83	95% Adjusted-CLT UCL (Chen-1995)	18.19
		95% Modified-t UCL (Johnson-1978)	18.08

Nonparametric Distribution Free UCLs

95% CLT UCL	16.63	95% Jackknife UCL	17.83
95% Standard Bootstrap UCL	16.1	95% Bootstrap-t UCL	20.04
95% Hall's Bootstrap UCL	45.6	95% Percentile Bootstrap UCL	16.43
95% BCA Bootstrap UCL	17.29		
90% Chebyshev(Mean, Sd) UCL	21.05	95% Chebyshev(Mean, Sd) UCL	25.48
97.5% Chebyshev(Mean, Sd) UCL	31.64	99% Chebyshev(Mean, Sd) UCL	43.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.99	Mean	22.08
Maximum	46.6	Median	19.35
SD	14.57	Std. Error of Mean	5.949
Coefficient of Variation	0.66	Skewness	0.967
Mean of logged Data	2.902	SD of logged Data	0.698

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.07	95% Adjusted-CLT UCL (Chen-1995)	34.38
		95% Modified-t UCL (Johnson-1978)	34.46

Nonparametric Distribution Free UCLs

95% CLT UCL	31.87	95% Jackknife UCL	34.07
95% Standard Bootstrap UCL	30.9	95% Bootstrap-t UCL	39
95% Hall's Bootstrap UCL	88.35	95% Percentile Bootstrap UCL	31.68
95% BCA Bootstrap UCL	32.85		
90% Chebyshev(Mean, Sd) UCL	39.93	95% Chebyshev(Mean, Sd) UCL	48.01
97.5% Chebyshev(Mean, Sd) UCL	59.23	99% Chebyshev(Mean, Sd) UCL	81.28

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.26	Mean	4.563
Maximum	7.34	Median	4.01
SD	1.629	Std. Error of Mean	0.665
Coefficient of Variation	0.357	Skewness	1.13
Mean of logged Data	1.47	SD of logged Data	0.333

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.904	95% Adjusted-CLT UCL (Chen-1995)	5.985
		95% Modified-t UCL (Johnson-1978)	5.955

Nonparametric Distribution Free UCLs

95% CLT UCL	5.657	95% Jackknife UCL	5.904
95% Standard Bootstrap UCL	5.58	95% Bootstrap-t UCL	6.547
95% Hall's Bootstrap UCL	6.978	95% Percentile Bootstrap UCL	5.613
95% BCA Bootstrap UCL	5.735		
90% Chebyshev(Mean, Sd) UCL	6.559	95% Chebyshev(Mean, Sd) UCL	7.463
97.5% Chebyshev(Mean, Sd) UCL	8.717	99% Chebyshev(Mean, Sd) UCL	11.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.59	Mean	21.47
Maximum	43.5	Median	17.55
SD	13.76	Std. Error of Mean	5.618
Coefficient of Variation	0.641	Skewness	0.901
Mean of logged Data	2.894	SD of logged Data	0.648

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.79	95% Adjusted-CLT UCL (Chen-1995)	32.92
		95% Modified-t UCL (Johnson-1978)	33.13

Nonparametric Distribution Free UCLs

95% CLT UCL	30.71	95% Jackknife UCL	32.79
95% Standard Bootstrap UCL	30.07	95% Bootstrap-t UCL	43.72
95% Hall's Bootstrap UCL	92.25	95% Percentile Bootstrap UCL	30.12
95% BCA Bootstrap UCL	31.26		
90% Chebyshev(Mean, Sd) UCL	38.32	95% Chebyshev(Mean, Sd) UCL	45.96
97.5% Chebyshev(Mean, Sd) UCL	56.55	99% Chebyshev(Mean, Sd) UCL	77.37

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.29	Mean	1.355
Maximum	1.62	Median	1.305
SD	0.13	Std. Error of Mean	0.0531
Coefficient of Variation	0.0959	Skewness	2.434
Mean of logged Data	0.3	SD of logged Data	0.0894

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.462	95% Adjusted-CLT UCL (Chen-1995)	1.499
		95% Modified-t UCL (Johnson-1978)	1.471

Nonparametric Distribution Free UCLs

95% CLT UCL	1.442	95% Jackknife UCL	1.462
95% Standard Bootstrap UCL	1.436	95% Bootstrap-t UCL	3.111
95% Hall's Bootstrap UCL	2.596	95% Percentile Bootstrap UCL	1.459
95% BCA Bootstrap UCL	1.463		
90% Chebyshev(Mean, Sd) UCL	1.514	95% Chebyshev(Mean, Sd) UCL	1.586
97.5% Chebyshev(Mean, Sd) UCL	1.686	99% Chebyshev(Mean, Sd) UCL	1.883

Suggested UCL to Use

95% Student's-t UCL	1.462	or 95% Modified-t UCL	1.471

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.05	Mean	15.18
Maximum	34.4	Median	13.6
SD	10.97	Std. Error of Mean	4.479
Coefficient of Variation	0.723	Skewness	1.138
Mean of logged Data	2.486	SD of logged Data	0.779

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.21	95% Adjusted-CLT UCL (Chen-1995)	24.77
		95% Modified-t UCL (Johnson-1978)	24.56

Nonparametric Distribution Free UCLs

95% CLT UCL	22.55	95% Jackknife UCL	24.21
95% Standard Bootstrap UCL	22.01	95% Bootstrap-t UCL	29.27
95% Hall's Bootstrap UCL	63.92	95% Percentile Bootstrap UCL	22.41
95% BCA Bootstrap UCL	23.56		
90% Chebyshev(Mean, Sd) UCL	28.62	95% Chebyshev(Mean, Sd) UCL	34.71
97.5% Chebyshev(Mean, Sd) UCL	43.16	99% Chebyshev(Mean, Sd) UCL	59.75

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.645	Mean	8.343
Maximum	16	Median	4.91
SD	5.444	Std. Error of Mean	2.223
Coefficient of Variation	0.653	Skewness	0.992
Mean of logged Data	1.961	SD of logged Data	0.597

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.82	95% Adjusted-CLT UCL (Chen-1995)	12.96

		95% Modified-t UCL (Johnson-1978)	12.97

Nonparametric Distribution Free UCLs

95% CLT UCL	12	95% Jackknife UCL	12.82
95% Standard Bootstrap UCL	11.71	95% Bootstrap-t UCL	157.2
95% Hall's Bootstrap UCL	348.4	95% Percentile Bootstrap UCL	11.87
95% BCA Bootstrap UCL	12.08		
90% Chebyshev(Mean, Sd) UCL	15.01	95% Chebyshev(Mean, Sd) UCL	18.03
97.5% Chebyshev(Mean, Sd) UCL	22.22	99% Chebyshev(Mean, Sd) UCL	30.46

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.03

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.81	Mean	6.19
Maximum	10.7	Median	5.225
SD	3.526	Std. Error of Mean	1.439
Coefficient of Variation	0.57	Skewness	0.524
Mean of logged Data	1.681	SD of logged Data	0.59

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.09	95% Adjusted-CLT UCL (Chen-1995)	8.886
		95% Modified-t UCL (Johnson-1978)	9.142

Nonparametric Distribution Free UCLs

95% CLT UCL	8.558	95% Jackknife UCL	9.09
95% Standard Bootstrap UCL	8.369	95% Bootstrap-t UCL	10.59
95% Hall's Bootstrap UCL	9.973	95% Percentile Bootstrap UCL	8.397
95% BCA Bootstrap UCL	8.562		
90% Chebyshev(Mean, Sd) UCL	10.51	95% Chebyshev(Mean, Sd) UCL	12.46
97.5% Chebyshev(Mean, Sd) UCL	15.18	99% Chebyshev(Mean, Sd) UCL	20.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.69	Mean	21.17
Maximum	41.8	Median	17.65
SD	12.83	Std. Error of Mean	5.238
Coefficient of Variation	0.606	Skewness	0.902
Mean of logged Data	2.899	SD of logged Data	0.61

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.72	95% Adjusted-CLT UCL (Chen-1995)	31.84
		95% Modified-t UCL (Johnson-1978)	32.04

Nonparametric Distribution Free UCLs

95% CLT UCL	29.78	95% Jackknife UCL	31.72
95% Standard Bootstrap UCL	29.29	95% Bootstrap-t UCL	40.69
95% Hall's Bootstrap UCL	92.74	95% Percentile Bootstrap UCL	29.48
95% BCA Bootstrap UCL	30.47		
90% Chebyshev(Mean, Sd) UCL	36.88	95% Chebyshev(Mean, Sd) UCL	44
97.5% Chebyshev(Mean, Sd) UCL	53.88	99% Chebyshev(Mean, Sd) UCL	73.28

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:36:32 AM
From File	04131.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.4	Mean	15.9
Maximum	18.4	Median	15.9
SD	2.258	Std. Error of Mean	0.922
Coefficient of Variation	0.142	Skewness	-9.25E-16
Mean of logged Data	2.758	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.76	95% Adjusted-CLT UCL (Chen-1995)	17.42
		95% Modified-t UCL (Johnson-1978)	17.76

Nonparametric Distribution Free UCLs

95% CLT UCL	17.42	95% Jackknife UCL	17.76
95% Standard Bootstrap UCL	17.29	95% Bootstrap-t UCL	17.84
95% Hall's Bootstrap UCL	17.53	95% Percentile Bootstrap UCL	17.33
95% BCA Bootstrap UCL	17.23		
90% Chebyshev(Mean, Sd) UCL	18.67	95% Chebyshev(Mean, Sd) UCL	19.92
97.5% Chebyshev(Mean, Sd) UCL	21.66	99% Chebyshev(Mean, Sd) UCL	25.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.1	Mean	15.43
Maximum	19.7	Median	15.1
SD	3.623	Std. Error of Mean	1.479
Coefficient of Variation	0.235	Skewness	0.101

Mean of logged Data	2.713	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.41	95% Adjusted-CLT UCL (Chen-1995)	17.93
		95% Modified-t UCL (Johnson-1978)	18.42

Nonparametric Distribution Free UCLs

95% CLT UCL	17.87	95% Jackknife UCL	18.41
95% Standard Bootstrap UCL	17.68	95% Bootstrap-t UCL	18.64
95% Hall's Bootstrap UCL	16.68	95% Percentile Bootstrap UCL	17.73
95% BCA Bootstrap UCL	17.73		
90% Chebyshev(Mean, Sd) UCL	19.87	95% Chebyshev(Mean, Sd) UCL	21.88
97.5% Chebyshev(Mean, Sd) UCL	24.67	99% Chebyshev(Mean, Sd) UCL	30.15

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	55.1	Mean	74.7
Maximum	97	Median	74
SD	21.1	Std. Error of Mean	8.616
Coefficient of Variation	0.283	Skewness	0.0269
Mean of logged Data	4.279	SD of logged Data	0.288

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	92.06	95% Adjusted-CLT UCL (Chen-1995)	88.97
		95% Modified-t UCL (Johnson-1978)	92.08

Nonparametric Distribution Free UCLs

95% CLT UCL	88.87	95% Jackknife UCL	92.06
95% Standard Bootstrap UCL	87.6	95% Bootstrap-t UCL	93.14
95% Hall's Bootstrap UCL	81.7	95% Percentile Bootstrap UCL	87.78
95% BCA Bootstrap UCL	87.75		
90% Chebyshev(Mean, Sd) UCL	100.5	95% Chebyshev(Mean, Sd) UCL	112.3
97.5% Chebyshev(Mean, Sd) UCL	128.5	99% Chebyshev(Mean, Sd) UCL	160.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.67	Mean	2.868
Maximum	3.76	Median	3.155
SD	1.017	Std. Error of Mean	0.415
Coefficient of Variation	0.355	Skewness	-0.343
Mean of logged Data	0.994	SD of logged Data	0.39

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.705	95% Adjusted-CLT UCL (Chen-1995)	3.489
		95% Modified-t UCL (Johnson-1978)	3.696

Nonparametric Distribution Free UCLs

95% CLT UCL	3.552	95% Jackknife UCL	3.705
95% Standard Bootstrap UCL	3.485	95% Bootstrap-t UCL	3.69
95% Hall's Bootstrap UCL	3.294	95% Percentile Bootstrap UCL	3.548
95% BCA Bootstrap UCL	3.412		
90% Chebyshev(Mean, Sd) UCL	4.114	95% Chebyshev(Mean, Sd) UCL	4.679
97.5% Chebyshev(Mean, Sd) UCL	5.462	99% Chebyshev(Mean, Sd) UCL	7.001

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.489	Mean	0.504
Maximum	0.52	Median	0.5
SD	0.0135	Std. Error of Mean	0.00551
Coefficient of Variation	0.0268	Skewness	0.528
Mean of logged Data	-0.686	SD of logged Data	0.0267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.515	95% Adjusted-CLT UCL (Chen-1995)	0.514
		95% Modified-t UCL (Johnson-1978)	0.515

Nonparametric Distribution Free UCLs

95% CLT UCL	0.513	95% Jackknife UCL	0.515
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.52	95% Chebyshev(Mean, Sd) UCL	0.528
97.5% Chebyshev(Mean, Sd) UCL	0.538	99% Chebyshev(Mean, Sd) UCL	0.558

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.35	Mean	1.937
Maximum	2.115	Median	2.033
SD	0.292	Std. Error of Mean	0.119
Coefficient of Variation	0.151	Skewness	-2.295
Mean of logged Data	0.65	SD of logged Data	0.173

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.177	95% Adjusted-CLT UCL (Chen-1995)	2.013
		95% Modified-t UCL (Johnson-1978)	2.158

Nonparametric Distribution Free UCLs

95% CLT UCL	2.132	95% Jackknife UCL	2.177
95% Standard Bootstrap UCL	2.122	95% Bootstrap-t UCL	2.097
95% Hall's Bootstrap UCL	2.051	95% Percentile Bootstrap UCL	2.076
95% BCA Bootstrap UCL	2.063		
90% Chebyshev(Mean, Sd) UCL	2.294	95% Chebyshev(Mean, Sd) UCL	2.455
97.5% Chebyshev(Mean, Sd) UCL	2.68	99% Chebyshev(Mean, Sd) UCL	3.121

Suggested UCL to Use

95% Student's-t UCL	2.177	or 95% Modified-t UCL	2.158

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.69	Mean	3.933
Maximum	6.87	Median	3.765
SD	2.21	Std. Error of Mean	0.902
Coefficient of Variation	0.562	Skewness	0.236
Mean of logged Data	1.222	SD of logged Data	0.608

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.751	95% Adjusted-CLT UCL (Chen-1995)	5.51
		95% Modified-t UCL (Johnson-1978)	5.765

Nonparametric Distribution Free UCLs

95% CLT UCL	5.417	95% Jackknife UCL	5.751
95% Standard Bootstrap UCL	5.298	95% Bootstrap-t UCL	6.103
95% Hall's Bootstrap UCL	4.827	95% Percentile Bootstrap UCL	5.334
95% BCA Bootstrap UCL	5.334		
90% Chebyshev(Mean, Sd) UCL	6.639	95% Chebyshev(Mean, Sd) UCL	7.865
97.5% Chebyshev(Mean, Sd) UCL	9.567	99% Chebyshev(Mean, Sd) UCL	12.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.48	Mean	5.413
Maximum	11.2	Median	5.035
SD	4.13	Std. Error of Mean	1.686
Coefficient of Variation	0.763	Skewness	0.352

Mean of logged Data	1.384	SD of logged Data	0.895

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.811	95% Adjusted-CLT UCL (Chen-1995)	8.446
		95% Modified-t UCL (Johnson-1978)	8.851

Nonparametric Distribution Free UCLs

95% CLT UCL	8.187	95% Jackknife UCL	8.811
95% Standard Bootstrap UCL	8.02	95% Bootstrap-t UCL	9.661
95% Hall's Bootstrap UCL	7.204	95% Percentile Bootstrap UCL	7.997
95% BCA Bootstrap UCL	8.057		
90% Chebyshev(Mean, Sd) UCL	10.47	95% Chebyshev(Mean, Sd) UCL	12.76
97.5% Chebyshev(Mean, Sd) UCL	15.94	99% Chebyshev(Mean, Sd) UCL	22.19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.81	Mean	8.123
Maximum	13.8	Median	8.14
SD	5.208	Std. Error of Mean	2.126
Coefficient of Variation	0.641	Skewness	0.018
Mean of logged Data	1.882	SD of logged Data	0.744

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.41	95% Adjusted-CLT UCL (Chen-1995)	11.64
		95% Modified-t UCL (Johnson-1978)	12.41

Nonparametric Distribution Free UCLs

95% CLT UCL	11.62	95% Jackknife UCL	12.41
95% Standard Bootstrap UCL	11.31	95% Bootstrap-t UCL	12.64
95% Hall's Bootstrap UCL	9.941	95% Percentile Bootstrap UCL	11.28
95% BCA Bootstrap UCL	11.19		
90% Chebyshev(Mean, Sd) UCL	14.5	95% Chebyshev(Mean, Sd) UCL	17.39
97.5% Chebyshev(Mean, Sd) UCL	21.4	99% Chebyshev(Mean, Sd) UCL	29.28

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.125	Mean	7.332
Maximum	13.6	Median	7.155
SD	4.266	Std. Error of Mean	1.742
Coefficient of Variation	0.582	Skewness	0.427
Mean of logged Data	1.836	SD of logged Data	0.627

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.84	95% Adjusted-CLT UCL (Chen-1995)	10.52
		95% Modified-t UCL (Johnson-1978)	10.89

Nonparametric Distribution Free UCLs

95% CLT UCL	10.2	95% Jackknife UCL	10.84
95% Standard Bootstrap UCL	10.02	95% Bootstrap-t UCL	11.6
95% Hall's Bootstrap UCL	9.446	95% Percentile Bootstrap UCL	9.886
95% BCA Bootstrap UCL	10.13		
90% Chebyshev(Mean, Sd) UCL	12.56	95% Chebyshev(Mean, Sd) UCL	14.92
97.5% Chebyshev(Mean, Sd) UCL	18.21	99% Chebyshev(Mean, Sd) UCL	24.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	2.91
Maximum	3.76	Median	2.913
SD	0.906	Std. Error of Mean	0.37
Coefficient of Variation	0.311	Skewness	-0.0031
Mean of logged Data	1.026	SD of logged Data	0.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.655	95% Adjusted-CLT UCL (Chen-1995)	3.518
		95% Modified-t UCL (Johnson-1978)	3.655

Nonparametric Distribution Free UCLs

95% CLT UCL	3.519	95% Jackknife UCL	3.655
95% Standard Bootstrap UCL	3.475	95% Bootstrap-t UCL	3.659
95% Hall's Bootstrap UCL	3.207	95% Percentile Bootstrap UCL	3.464
95% BCA Bootstrap UCL	3.46		
90% Chebyshev(Mean, Sd) UCL	4.02	95% Chebyshev(Mean, Sd) UCL	4.523
97.5% Chebyshev(Mean, Sd) UCL	5.22	99% Chebyshev(Mean, Sd) UCL	6.591

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.29	Mean	9.67
Maximum	17.9	Median	9.515
SD	7.467	Std. Error of Mean	3.048
Coefficient of Variation	0.772	Skewness	0.038
Mean of logged Data	1.923	SD of logged Data	0.97

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.81	95% Adjusted-CLT UCL (Chen-1995)	14.73
		95% Modified-t UCL (Johnson-1978)	15.82

Nonparametric Distribution Free UCLs

95% CLT UCL	14.68	95% Jackknife UCL	15.81
95% Standard Bootstrap UCL	14.28	95% Bootstrap-t UCL	16.02
95% Hall's Bootstrap UCL	12.22	95% Percentile Bootstrap UCL	14.25
95% BCA Bootstrap UCL	14.33		
90% Chebyshev(Mean, Sd) UCL	18.82	95% Chebyshev(Mean, Sd) UCL	22.96
97.5% Chebyshev(Mean, Sd) UCL	28.71	99% Chebyshev(Mean, Sd) UCL	40

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.96	Mean	3.129
Maximum	3.25	Median	3.128
SD	0.107	Std. Error of Mean	0.0437
Coefficient of Variation	0.0342	Skewness	-0.5
Mean of logged Data	1.14	SD of logged Data	0.0345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.217	95% Adjusted-CLT UCL (Chen-1995)	3.192
		95% Modified-t UCL (Johnson-1978)	3.216

Nonparametric Distribution Free UCLs

95% CLT UCL	3.201	95% Jackknife UCL	3.217
95% Standard Bootstrap UCL	3.195	95% Bootstrap-t UCL	3.21
95% Hall's Bootstrap UCL	3.218	95% Percentile Bootstrap UCL	3.193
95% BCA Bootstrap UCL	3.184		
90% Chebyshev(Mean, Sd) UCL	3.26	95% Chebyshev(Mean, Sd) UCL	3.32
97.5% Chebyshev(Mean, Sd) UCL	3.402	99% Chebyshev(Mean, Sd) UCL	3.564

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.38	Mean	9.507
Maximum	19.5	Median	8.125
SD	7.135	Std. Error of Mean	2.913
Coefficient of Variation	0.751	Skewness	0.419
Mean of logged Data	1.961	SD of logged Data	0.876

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.38	95% Adjusted-CLT UCL (Chen-1995)	14.83
		95% Modified-t UCL (Johnson-1978)	15.46

Nonparametric Distribution Free UCLs

95% CLT UCL	14.3	95% Jackknife UCL	15.38
95% Standard Bootstrap UCL	13.98	95% Bootstrap-t UCL	18.75
95% Hall's Bootstrap UCL	12.88	95% Percentile Bootstrap UCL	13.76
95% BCA Bootstrap UCL	14.31		
90% Chebyshev(Mean, Sd) UCL	18.25	95% Chebyshev(Mean, Sd) UCL	22.2
97.5% Chebyshev(Mean, Sd) UCL	27.7	99% Chebyshev(Mean, Sd) UCL	38.49

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.03	Mean	1.239
Maximum	1.42	Median	1.255
SD	0.129	Std. Error of Mean	0.0528
Coefficient of Variation	0.104	Skewness	-0.452
Mean of logged Data	0.21	SD of logged Data	0.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.346	95% Adjusted-CLT UCL (Chen-1995)	1.316
		95% Modified-t UCL (Johnson-1978)	1.344

Nonparametric Distribution Free UCLs

95% CLT UCL	1.326	95% Jackknife UCL	1.346
95% Standard Bootstrap UCL	1.317	95% Bootstrap-t UCL	1.331
95% Hall's Bootstrap UCL	1.326	95% Percentile Bootstrap UCL	1.318
95% BCA Bootstrap UCL	1.308		
90% Chebyshev(Mean, Sd) UCL	1.398	95% Chebyshev(Mean, Sd) UCL	1.469
97.5% Chebyshev(Mean, Sd) UCL	1.569	99% Chebyshev(Mean, Sd) UCL	1.764

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.36	Mean	4.74
Maximum	7.71	Median	4.548
SD	2.126	Std. Error of Mean	0.868
Coefficient of Variation	0.449	Skewness	0.29
Mean of logged Data	1.467	SD of logged Data	0.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.489	95% Adjusted-CLT UCL (Chen-1995)	6.278
		95% Modified-t UCL (Johnson-1978)	6.506

Nonparametric Distribution Free UCLs

95% CLT UCL	6.168	95% Jackknife UCL	6.489
95% Standard Bootstrap UCL	6.074	95% Bootstrap-t UCL	6.874
95% Hall's Bootstrap UCL	5.738	95% Percentile Bootstrap UCL	6.136
95% BCA Bootstrap UCL	6.136		
90% Chebyshev(Mean, Sd) UCL	7.344	95% Chebyshev(Mean, Sd) UCL	8.523
97.5% Chebyshev(Mean, Sd) UCL	10.16	99% Chebyshev(Mean, Sd) UCL	13.38

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.76	Mean	4.972
Maximum	5.9	Median	5.215
SD	0.922	Std. Error of Mean	0.376
Coefficient of Variation	0.185	Skewness	-0.568
Mean of logged Data	1.588	SD of logged Data	0.195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.73	95% Adjusted-CLT UCL (Chen-1995)	5.497
		95% Modified-t UCL (Johnson-1978)	5.715

Nonparametric Distribution Free UCLs

95% CLT UCL	5.591	95% Jackknife UCL	5.73
95% Standard Bootstrap UCL	5.534	95% Bootstrap-t UCL	5.589
95% Hall's Bootstrap UCL	5.371	95% Percentile Bootstrap UCL	5.53
95% BCA Bootstrap UCL	5.5		
90% Chebyshev(Mean, Sd) UCL	6.1	95% Chebyshev(Mean, Sd) UCL	6.612
97.5% Chebyshev(Mean, Sd) UCL	7.322	99% Chebyshev(Mean, Sd) UCL	8.716

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.49	Mean	7.013
Maximum	15.9	Median	5.665
SD	5.262	Std. Error of Mean	2.148
Coefficient of Variation	0.75	Skewness	1.038
Mean of logged Data	1.707	SD of logged Data	0.765

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.34	95% Adjusted-CLT UCL (Chen-1995)	11.52
		95% Modified-t UCL (Johnson-1978)	11.49

Nonparametric Distribution Free UCLs

95% CLT UCL	10.55	95% Jackknife UCL	11.34
95% Standard Bootstrap UCL	10.28	95% Bootstrap-t UCL	15.37
95% Hall's Bootstrap UCL	11.64	95% Percentile Bootstrap UCL	10.58
95% BCA Bootstrap UCL	10.58		
90% Chebyshev(Mean, Sd) UCL	13.46	95% Chebyshev(Mean, Sd) UCL	16.38
97.5% Chebyshev(Mean, Sd) UCL	20.43	99% Chebyshev(Mean, Sd) UCL	28.39

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.96	Mean	8.149
Maximum	15.5	Median	7.368
SD	5.719	Std. Error of Mean	2.335
Coefficient of Variation	0.702	Skewness	0.215
Mean of logged Data	1.847	SD of logged Data	0.804

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.85	95% Adjusted-CLT UCL (Chen-1995)	12.21
		95% Modified-t UCL (Johnson-1978)	12.89

Nonparametric Distribution Free UCLs

95% CLT UCL	11.99	95% Jackknife UCL	12.85
95% Standard Bootstrap UCL	11.72	95% Bootstrap-t UCL	13.23
95% Hall's Bootstrap UCL	10.29	95% Percentile Bootstrap UCL	11.62
95% BCA Bootstrap UCL	11.86		
90% Chebyshev(Mean, Sd) UCL	15.15	95% Chebyshev(Mean, Sd) UCL	18.33
97.5% Chebyshev(Mean, Sd) UCL	22.73	99% Chebyshev(Mean, Sd) UCL	31.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:37:39 AM
From File	04152_153.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15	Mean	18
Maximum	21.9	Median	17.8
SD	2.381	Std. Error of Mean	0.972
Coefficient of Variation	0.132	Skewness	0.656
Mean of logged Data	2.883	SD of logged Data	0.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.96	95% Adjusted-CLT UCL (Chen-1995)	19.88
		95% Modified-t UCL (Johnson-1978)	20

Nonparametric Distribution Free UCLs

95% CLT UCL	19.6	95% Jackknife UCL	19.96
95% Standard Bootstrap UCL	19.48	95% Bootstrap-t UCL	20.48
95% Hall's Bootstrap UCL	20.53	95% Percentile Bootstrap UCL	19.48
95% BCA Bootstrap UCL	19.48		
90% Chebyshev(Mean, Sd) UCL	20.92	95% Chebyshev(Mean, Sd) UCL	22.24
97.5% Chebyshev(Mean, Sd) UCL	24.07	99% Chebyshev(Mean, Sd) UCL	27.67

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.5	Mean	15.5
Maximum	19.1	Median	15.55
SD	2.471	Std. Error of Mean	1.009
Coefficient of Variation	0.159	Skewness	0.268
Mean of logged Data	2.73	SD of logged Data	0.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.53	95% Adjusted-CLT UCL (Chen-1995)	17.28
		95% Modified-t UCL (Johnson-1978)	17.55

Nonparametric Distribution Free UCLs

95% CLT UCL	17.16	95% Jackknife UCL	17.53
95% Standard Bootstrap UCL	16.96	95% Bootstrap-t UCL	17.88
95% Hall's Bootstrap UCL	17	95% Percentile Bootstrap UCL	17
95% BCA Bootstrap UCL	17.02		
90% Chebyshev(Mean, Sd) UCL	18.53	95% Chebyshev(Mean, Sd) UCL	19.9
97.5% Chebyshev(Mean, Sd) UCL	21.8	99% Chebyshev(Mean, Sd) UCL	25.54

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	58.9	Mean	71.53
Maximum	86.9	Median	70.1
SD	12.03	Std. Error of Mean	4.91
Coefficient of Variation	0.168	Skewness	0.261
Mean of logged Data	4.258	SD of logged Data	0.168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	81.43	95% Adjusted-CLT UCL (Chen-1995)	80.17
		95% Modified-t UCL (Johnson-1978)	81.51

Nonparametric Distribution Free UCLs

95% CLT UCL	79.61	95% Jackknife UCL	81.43
95% Standard Bootstrap UCL	78.98	95% Bootstrap-t UCL	81.55
95% Hall's Bootstrap UCL	80.58	95% Percentile Bootstrap UCL	79.2
95% BCA Bootstrap UCL	79.65		
90% Chebyshev(Mean, Sd) UCL	86.26	95% Chebyshev(Mean, Sd) UCL	92.93
97.5% Chebyshev(Mean, Sd) UCL	102.2	99% Chebyshev(Mean, Sd) UCL	120.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.03	Mean	2.548
Maximum	6.92	Median	2.03
SD	2.198	Std. Error of Mean	0.897
Coefficient of Variation	0.862	Skewness	2.171
Mean of logged Data	0.711	SD of logged Data	0.681

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.356	95% Adjusted-CLT UCL (Chen-1995)	4.874
		95% Modified-t UCL (Johnson-1978)	4.489

Nonparametric Distribution Free UCLs

95% CLT UCL	4.024	95% Jackknife UCL	4.356
95% Standard Bootstrap UCL	3.922	95% Bootstrap-t UCL	7.676
95% Hall's Bootstrap UCL	11.56	95% Percentile Bootstrap UCL	4.16
95% BCA Bootstrap UCL	4.472		
90% Chebyshev(Mean, Sd) UCL	5.24	95% Chebyshev(Mean, Sd) UCL	6.459
97.5% Chebyshev(Mean, Sd) UCL	8.151	99% Chebyshev(Mean, Sd) UCL	11.47

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.458	Mean	0.591
Maximum	1.02	Median	0.523
SD	0.212	Std. Error of Mean	0.0865
Coefficient of Variation	0.358	Skewness	2.357
Mean of logged Data	-0.567	SD of logged Data	0.292

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.765	95% Adjusted-CLT UCL (Chen-1995)	0.822
		95% Modified-t UCL (Johnson-1978)	0.779

Nonparametric Distribution Free UCLs

95% CLT UCL	0.733	95% Jackknife UCL	0.765
95% Standard Bootstrap UCL	0.724	95% Bootstrap-t UCL	1.615
95% Hall's Bootstrap UCL	1.788	95% Percentile Bootstrap UCL	0.761
95% BCA Bootstrap UCL	0.773		
90% Chebyshev(Mean, Sd) UCL	0.851	95% Chebyshev(Mean, Sd) UCL	0.968
97.5% Chebyshev(Mean, Sd) UCL	1.131	99% Chebyshev(Mean, Sd) UCL	1.452

Suggested UCL to Use

95% Student's-t UCL	0.765	or 95% Modified-t UCL	0.779

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.44	Mean	2.003
Maximum	2.16	Median	2.115
SD	0.28	Std. Error of Mean	0.114
Coefficient of Variation	0.14	Skewness	-2.305
Mean of logged Data	0.685	SD of logged Data	0.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.234	95% Adjusted-CLT UCL (Chen-1995)	2.076
		95% Modified-t UCL (Johnson-1978)	2.216

Nonparametric Distribution Free UCLs

95% CLT UCL	2.191	95% Jackknife UCL	2.234
95% Standard Bootstrap UCL	2.178	95% Bootstrap-t UCL	2.164
95% Hall's Bootstrap UCL	2.111	95% Percentile Bootstrap UCL	2.134
95% BCA Bootstrap UCL	2.123		
90% Chebyshev(Mean, Sd) UCL	2.346	95% Chebyshev(Mean, Sd) UCL	2.501
97.5% Chebyshev(Mean, Sd) UCL	2.717	99% Chebyshev(Mean, Sd) UCL	3.14

Suggested UCL to Use

95% Student's-t UCL	2.234	or 95% Modified-t UCL	2.216

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.89	Mean	7.492
Maximum	13.1	Median	7.51
SD	4.964	Std. Error of Mean	2.027
Coefficient of Variation	0.663	Skewness	-0.0058
Mean of logged Data	1.759	SD of logged Data	0.847

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.58	95% Adjusted-CLT UCL (Chen-1995)	10.82
		95% Modified-t UCL (Johnson-1978)	11.57

Nonparametric Distribution Free UCLs

95% CLT UCL	10.83	95% Jackknife UCL	11.58
95% Standard Bootstrap UCL	10.51	95% Bootstrap-t UCL	11.77
95% Hall's Bootstrap UCL	10.29	95% Percentile Bootstrap UCL	10.47
95% BCA Bootstrap UCL	10.62		
90% Chebyshev(Mean, Sd) UCL	13.57	95% Chebyshev(Mean, Sd) UCL	16.33
97.5% Chebyshev(Mean, Sd) UCL	20.15	99% Chebyshev(Mean, Sd) UCL	27.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.8	Mean	11.41
Maximum	19.7	Median	12.53
SD	7.262	Std. Error of Mean	2.965
Coefficient of Variation	0.637	Skewness	-0.154
Mean of logged Data	2.194	SD of logged Data	0.826

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.38	95% Adjusted-CLT UCL (Chen-1995)	16.09
		95% Modified-t UCL (Johnson-1978)	17.35

Nonparametric Distribution Free UCLs

95% CLT UCL	16.28	95% Jackknife UCL	17.38
95% Standard Bootstrap UCL	15.68	95% Bootstrap-t UCL	17.19
95% Hall's Bootstrap UCL	14.8	95% Percentile Bootstrap UCL	16.05
95% BCA Bootstrap UCL	15.81		
90% Chebyshev(Mean, Sd) UCL	20.3	95% Chebyshev(Mean, Sd) UCL	24.33
97.5% Chebyshev(Mean, Sd) UCL	29.92	99% Chebyshev(Mean, Sd) UCL	40.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.18	Mean	13.77
Maximum	24.2	Median	14.15
SD	9.067	Std. Error of Mean	3.701
Coefficient of Variation	0.658	Skewness	-0.0481
Mean of logged Data	2.371	SD of logged Data	0.842

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.23	95% Adjusted-CLT UCL (Chen-1995)	19.78
		95% Modified-t UCL (Johnson-1978)	21.22

Nonparametric Distribution Free UCLs

95% CLT UCL	19.86	95% Jackknife UCL	21.23
95% Standard Bootstrap UCL	19.26	95% Bootstrap-t UCL	21.37
95% Hall's Bootstrap UCL	17.75	95% Percentile Bootstrap UCL	19.18
95% BCA Bootstrap UCL	19.43		
90% Chebyshev(Mean, Sd) UCL	24.88	95% Chebyshev(Mean, Sd) UCL	29.91
97.5% Chebyshev(Mean, Sd) UCL	36.89	99% Chebyshev(Mean, Sd) UCL	50.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.14	Mean	8.593
Maximum	13.8	Median	8.795
SD	4.987	Std. Error of Mean	2.036
Coefficient of Variation	0.58	Skewness	-0.0618
Mean of logged Data	1.974	SD of logged Data	0.687

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.69	95% Adjusted-CLT UCL (Chen-1995)	11.89
		95% Modified-t UCL (Johnson-1978)	12.69

Nonparametric Distribution Free UCLs

95% CLT UCL	11.94	95% Jackknife UCL	12.69
95% Standard Bootstrap UCL	11.61	95% Bootstrap-t UCL	12.8
95% Hall's Bootstrap UCL	10.81	95% Percentile Bootstrap UCL	11.6
95% BCA Bootstrap UCL	11.62		
90% Chebyshev(Mean, Sd) UCL	14.7	95% Chebyshev(Mean, Sd) UCL	17.47
97.5% Chebyshev(Mean, Sd) UCL	21.31	99% Chebyshev(Mean, Sd) UCL	28.85

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.085	Mean	5.983
Maximum	10.6	Median	6.115

SD	3.674	Std. Error of Mean	1.5
Coefficient of Variation	0.614	Skewness	0.0577
Mean of logged Data	1.591	SD of logged Data	0.726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.005	95% Adjusted-CLT UCL (Chen-1995)	8.487
		95% Modified-t UCL (Johnson-1978)	9.011

Nonparametric Distribution Free UCLs

95% CLT UCL	8.45	95% Jackknife UCL	9.005
95% Standard Bootstrap UCL	8.212	95% Bootstrap-t UCL	9.438
95% Hall's Bootstrap UCL	7.605	95% Percentile Bootstrap UCL	8.291
95% BCA Bootstrap UCL	8.192		
90% Chebyshev(Mean, Sd) UCL	10.48	95% Chebyshev(Mean, Sd) UCL	12.52
97.5% Chebyshev(Mean, Sd) UCL	15.35	99% Chebyshev(Mean, Sd) UCL	20.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.52	Mean	10.76
Maximum	18.4	Median	11.06
SD	7.157	Std. Error of Mean	2.922
Coefficient of Variation	0.665	Skewness	-0.0731
Mean of logged Data	2.115	SD of logged Data	0.861

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.65	95% Adjusted-CLT UCL (Chen-1995)	15.47
		95% Modified-t UCL (Johnson-1978)	16.63

Nonparametric Distribution Free UCLs

95% CLT UCL	15.57	95% Jackknife UCL	16.65
95% Standard Bootstrap UCL	15.05	95% Bootstrap-t UCL	16.19
95% Hall's Bootstrap UCL	14.05	95% Percentile Bootstrap UCL	15.19
95% BCA Bootstrap UCL	15.16		
90% Chebyshev(Mean, Sd) UCL	19.53	95% Chebyshev(Mean, Sd) UCL	23.5

97.5% Chebyshev(Mean, Sd) UCL	29.01	99% Chebyshev(Mean, Sd) UCL	39.83

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.76	Mean	3.358
Maximum	4.26	Median	3.295
SD	0.49	Std. Error of Mean	0.2
Coefficient of Variation	0.146	Skewness	1.318
Mean of logged Data	1.203	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.761	95% Adjusted-CLT UCL (Chen-1995)	3.802
		95% Modified-t UCL (Johnson-1978)	3.779

Nonparametric Distribution Free UCLs

95% CLT UCL	3.687	95% Jackknife UCL	3.761
95% Standard Bootstrap UCL	3.656	95% Bootstrap-t UCL	4.228
95% Hall's Bootstrap UCL	5.954	95% Percentile Bootstrap UCL	3.688
95% BCA Bootstrap UCL	3.769		
90% Chebyshev(Mean, Sd) UCL	3.958	95% Chebyshev(Mean, Sd) UCL	4.23
97.5% Chebyshev(Mean, Sd) UCL	4.608	99% Chebyshev(Mean, Sd) UCL	5.349

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.85	Mean	14.09
Maximum	26.3	Median	14.82
SD	10.31	Std. Error of Mean	4.209

Coefficient of Variation	0.732	Skewness	-0.0239
Mean of logged Data	2.311	SD of logged Data	0.985

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.57	95% Adjusted-CLT UCL (Chen-1995)	20.97
		95% Modified-t UCL (Johnson-1978)	22.56

Nonparametric Distribution Free UCLs

95% CLT UCL	21.01	95% Jackknife UCL	22.57
95% Standard Bootstrap UCL	20.57	95% Bootstrap-t UCL	23.16
95% Hall's Bootstrap UCL	18.47	95% Percentile Bootstrap UCL	20.44
95% BCA Bootstrap UCL	20.47		
90% Chebyshev(Mean, Sd) UCL	26.71	95% Chebyshev(Mean, Sd) UCL	32.43
97.5% Chebyshev(Mean, Sd) UCL	40.37	99% Chebyshev(Mean, Sd) UCL	55.96

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.285	Mean	1.332
Maximum	1.4	Median	1.328
SD	0.0375	Std. Error of Mean	0.0153
Coefficient of Variation	0.0282	Skewness	1.226
Mean of logged Data	0.286	SD of logged Data	0.0279

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.363	95% Adjusted-CLT UCL (Chen-1995)	1.365
		95% Modified-t UCL (Johnson-1978)	1.364

Nonparametric Distribution Free UCLs

95% CLT UCL	1.357	95% Jackknife UCL	1.363
95% Standard Bootstrap UCL	1.354	95% Bootstrap-t UCL	1.378
95% Hall's Bootstrap UCL	1.517	95% Percentile Bootstrap UCL	1.356

95% BCA Bootstrap UCL	1.363		
90% Chebyshev(Mean, Sd) UCL	1.378	95% Chebyshev(Mean, Sd) UCL	1.398
97.5% Chebyshev(Mean, Sd) UCL	1.427	99% Chebyshev(Mean, Sd) UCL	1.484

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.32	Mean	9.775
Maximum	17.1	Median	10.26
SD	6.475	Std. Error of Mean	2.643
Coefficient of Variation	0.662	Skewness	-0.0826
Mean of logged Data	2.022	SD of logged Data	0.853

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.1	95% Adjusted-CLT UCL (Chen-1995)	14.03
		95% Modified-t UCL (Johnson-1978)	15.09

Nonparametric Distribution Free UCLs

95% CLT UCL	14.12	95% Jackknife UCL	15.1
95% Standard Bootstrap UCL	13.78	95% Bootstrap-t UCL	15.07
95% Hall's Bootstrap UCL	12.53	95% Percentile Bootstrap UCL	13.7
95% BCA Bootstrap UCL	13.72		
90% Chebyshev(Mean, Sd) UCL	17.71	95% Chebyshev(Mean, Sd) UCL	21.3
97.5% Chebyshev(Mean, Sd) UCL	26.28	99% Chebyshev(Mean, Sd) UCL	36.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.02	Mean	2.328

Maximum	5.79	Median	1.875
SD	1.772	Std. Error of Mean	0.723
Coefficient of Variation	0.761	Skewness	1.997
Mean of logged Data	0.658	SD of logged Data	0.633

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.786	95% Adjusted-CLT UCL (Chen-1995)	4.149
		95% Modified-t UCL (Johnson-1978)	3.884

Nonparametric Distribution Free UCLs

95% CLT UCL	3.518	95% Jackknife UCL	3.786
95% Standard Bootstrap UCL	3.433	95% Bootstrap-t UCL	5.82
95% Hall's Bootstrap UCL	8.797	95% Percentile Bootstrap UCL	3.568
95% BCA Bootstrap UCL	3.82		
90% Chebyshev(Mean, Sd) UCL	4.499	95% Chebyshev(Mean, Sd) UCL	5.482
97.5% Chebyshev(Mean, Sd) UCL	6.846	99% Chebyshev(Mean, Sd) UCL	9.526

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.03	Mean	6.128
Maximum	11	Median	5.703
SD	3.391	Std. Error of Mean	1.384
Coefficient of Variation	0.553	Skewness	0.419
Mean of logged Data	1.676	SD of logged Data	0.579

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.917	95% Adjusted-CLT UCL (Chen-1995)	8.658
		95% Modified-t UCL (Johnson-1978)	8.956

Nonparametric Distribution Free UCLs

95% CLT UCL	8.404	95% Jackknife UCL	8.917
95% Standard Bootstrap UCL	8.193	95% Bootstrap-t UCL	9.702
95% Hall's Bootstrap UCL	7.646	95% Percentile Bootstrap UCL	8.248
95% BCA Bootstrap UCL	8.274		

90% Chebyshev(Mean, Sd) UCL	10.28	95% Chebyshev(Mean, Sd) UCL	12.16
97.5% Chebyshev(Mean, Sd) UCL	14.77	99% Chebyshev(Mean, Sd) UCL	19.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.54	Mean	12.85
Maximum	24.4	Median	13.31
SD	9.291	Std. Error of Mean	3.793
Coefficient of Variation	0.723	Skewness	0.0293
Mean of logged Data	2.234	SD of logged Data	0.961

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.49	95% Adjusted-CLT UCL (Chen-1995)	19.14
		95% Modified-t UCL (Johnson-1978)	20.5

Nonparametric Distribution Free UCLs

95% CLT UCL	19.09	95% Jackknife UCL	20.49
95% Standard Bootstrap UCL	18.56	95% Bootstrap-t UCL	21.29
95% Hall's Bootstrap UCL	16.99	95% Percentile Bootstrap UCL	18.96
95% BCA Bootstrap UCL	18.74		
90% Chebyshev(Mean, Sd) UCL	24.23	95% Chebyshev(Mean, Sd) UCL	29.38
97.5% Chebyshev(Mean, Sd) UCL	36.54	99% Chebyshev(Mean, Sd) UCL	50.59

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:38:56 AM
From File	04194.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15	Mean	58.17
Maximum	264	Median	16.4
SD	100.9	Std. Error of Mean	41.18
Coefficient of Variation	1.734	Skewness	2.446
Mean of logged Data	3.282	SD of logged Data	1.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	141.1	95% Adjusted-CLT UCL (Chen-1995)	169.8
		95% Modified-t UCL (Johnson-1978)	148

Nonparametric Distribution Free UCLs

95% CLT UCL	125.9	95% Jackknife UCL	141.1
95% Standard Bootstrap UCL	120.9	95% Bootstrap-t UCL	4489
95% Hall's Bootstrap UCL	2352	95% Percentile Bootstrap UCL	140
95% BCA Bootstrap UCL	141.9		
90% Chebyshev(Mean, Sd) UCL	181.7	95% Chebyshev(Mean, Sd) UCL	237.7
97.5% Chebyshev(Mean, Sd) UCL	315.3	99% Chebyshev(Mean, Sd) UCL	467.9

Suggested UCL to Use

95% Hall's Bootstrap UCL	2352

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.1	Mean	10.59
Maximum	12.1	Median	10.45
SD	1.278	Std. Error of Mean	0.522

Coefficient of Variation	0.121	Skewness	0.188
Mean of logged Data	2.353	SD of logged Data	0.121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.64	95% Adjusted-CLT UCL (Chen-1995)	11.49
		95% Modified-t UCL (Johnson-1978)	11.64

Nonparametric Distribution Free UCLs

95% CLT UCL	11.44	95% Jackknife UCL	11.64
95% Standard Bootstrap UCL	11.38	95% Bootstrap-t UCL	11.7
95% Hall's Bootstrap UCL	11.6	95% Percentile Bootstrap UCL	11.37
95% BCA Bootstrap UCL	11.4		
90% Chebyshev(Mean, Sd) UCL	12.15	95% Chebyshev(Mean, Sd) UCL	12.86
97.5% Chebyshev(Mean, Sd) UCL	13.84	99% Chebyshev(Mean, Sd) UCL	15.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.2	Mean	58.57
Maximum	70.4	Median	56.9
SD	6.688	Std. Error of Mean	2.73
Coefficient of Variation	0.114	Skewness	1.199
Mean of logged Data	4.065	SD of logged Data	0.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.07	95% Adjusted-CLT UCL (Chen-1995)	64.49
		95% Modified-t UCL (Johnson-1978)	64.29

Nonparametric Distribution Free UCLs

95% CLT UCL	63.06	95% Jackknife UCL	64.07
95% Standard Bootstrap UCL	62.67	95% Bootstrap-t UCL	68.17
95% Hall's Bootstrap UCL	88.63	95% Percentile Bootstrap UCL	63.17
95% BCA Bootstrap UCL	63.27		
90% Chebyshev(Mean, Sd) UCL	66.76	95% Chebyshev(Mean, Sd) UCL	70.47
97.5% Chebyshev(Mean, Sd) UCL	75.62	99% Chebyshev(Mean, Sd) UCL	85.73

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.747	Mean	1.444
Maximum	3.11	Median	1.135
SD	0.889	Std. Error of Mean	0.363
Coefficient of Variation	0.615	Skewness	1.691
Mean of logged Data	0.237	SD of logged Data	0.534

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.175	95% Adjusted-CLT UCL (Chen-1995)	2.308
		95% Modified-t UCL (Johnson-1978)	2.216

Nonparametric Distribution Free UCLs

95% CLT UCL	2.04	95% Jackknife UCL	2.175
95% Standard Bootstrap UCL	1.979	95% Bootstrap-t UCL	3.491
95% Hall's Bootstrap UCL	4.425	95% Percentile Bootstrap UCL	2.03
95% BCA Bootstrap UCL	2.213		
90% Chebyshev(Mean, Sd) UCL	2.532	95% Chebyshev(Mean, Sd) UCL	3.025
97.5% Chebyshev(Mean, Sd) UCL	3.709	99% Chebyshev(Mean, Sd) UCL	5.053

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.473	Mean	0.498
Maximum	0.525	Median	0.495
SD	0.0205	Std. Error of Mean	0.00838
Coefficient of Variation	0.0413	Skewness	0.19
Mean of logged Data	-0.699	SD of logged Data	0.0412

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.514	95% Adjusted-CLT UCL (Chen-1995)	0.512
		95% Modified-t UCL (Johnson-1978)	0.515

Nonparametric Distribution Free UCLs

95% CLT UCL	0.511	95% Jackknife UCL	0.514
95% Standard Bootstrap UCL	0.51	95% Bootstrap-t UCL	0.521
95% Hall's Bootstrap UCL	0.511	95% Percentile Bootstrap UCL	0.511
95% BCA Bootstrap UCL	0.51		
90% Chebyshev(Mean, Sd) UCL	0.523	95% Chebyshev(Mean, Sd) UCL	0.534
97.5% Chebyshev(Mean, Sd) UCL	0.55	99% Chebyshev(Mean, Sd) UCL	0.581

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.4	Mean	1.933
Maximum	2.125	Median	2.013
SD	0.269	Std. Error of Mean	0.11
Coefficient of Variation	0.139	Skewness	-2.14
Mean of logged Data	0.65	SD of logged Data	0.157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.155	95% Adjusted-CLT UCL (Chen-1995)	2.012
		95% Modified-t UCL (Johnson-1978)	2.139

Nonparametric Distribution Free UCLs

95% CLT UCL	2.114	95% Jackknife UCL	2.155
95% Standard Bootstrap UCL	2.101	95% Bootstrap-t UCL	2.089
95% Hall's Bootstrap UCL	2.038	95% Percentile Bootstrap UCL	2.07
95% BCA Bootstrap UCL	2.05		
90% Chebyshev(Mean, Sd) UCL	2.263	95% Chebyshev(Mean, Sd) UCL	2.412
97.5% Chebyshev(Mean, Sd) UCL	2.62	99% Chebyshev(Mean, Sd) UCL	3.027

Suggested UCL to Use

95% Student's-t UCL	2.155	or 95% Modified-t UCL	2.139

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.965	Mean	3.085
Maximum	4.34	Median	3.033
SD	1.142	Std. Error of Mean	0.466
Coefficient of Variation	0.37	Skewness	0.0443
Mean of logged Data	1.066	SD of logged Data	0.384

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.025	95% Adjusted-CLT UCL (Chen-1995)	3.861
		95% Modified-t UCL (Johnson-1978)	4.026

Nonparametric Distribution Free UCLs

95% CLT UCL	3.852	95% Jackknife UCL	4.025
95% Standard Bootstrap UCL	3.778	95% Bootstrap-t UCL	4.075
95% Hall's Bootstrap UCL	3.476	95% Percentile Bootstrap UCL	3.807
95% BCA Bootstrap UCL	3.807		
90% Chebyshev(Mean, Sd) UCL	4.484	95% Chebyshev(Mean, Sd) UCL	5.117
97.5% Chebyshev(Mean, Sd) UCL	5.997	99% Chebyshev(Mean, Sd) UCL	7.724

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.54	Mean	3.624
Maximum	5.7	Median	3.623
SD	1.901	Std. Error of Mean	0.776
Coefficient of Variation	0.525	Skewness	-0.00194
Mean of logged Data	1.155	SD of logged Data	0.581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.188	95% Adjusted-CLT UCL (Chen-1995)	4.9
		95% Modified-t UCL (Johnson-1978)	5.188

Nonparametric Distribution Free UCLs

95% CLT UCL	4.901	95% Jackknife UCL	5.188
95% Standard Bootstrap UCL	4.804	95% Bootstrap-t UCL	5.273
95% Hall's Bootstrap UCL	4.317	95% Percentile Bootstrap UCL	4.813
95% BCA Bootstrap UCL	4.744		
90% Chebyshev(Mean, Sd) UCL	5.952	95% Chebyshev(Mean, Sd) UCL	7.007
97.5% Chebyshev(Mean, Sd) UCL	8.471	99% Chebyshev(Mean, Sd) UCL	11.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.02	Mean	5.184
Maximum	7.61	Median	5.025
SD	2.243	Std. Error of Mean	0.916
Coefficient of Variation	0.433	Skewness	0.0505
Mean of logged Data	1.561	SD of logged Data	0.456

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.03	95% Adjusted-CLT UCL (Chen-1995)	6.711
		95% Modified-t UCL (Johnson-1978)	7.033

Nonparametric Distribution Free UCLs

95% CLT UCL	6.691	95% Jackknife UCL	7.03
95% Standard Bootstrap UCL	6.554	95% Bootstrap-t UCL	7.003
95% Hall's Bootstrap UCL	5.956	95% Percentile Bootstrap UCL	6.556
95% BCA Bootstrap UCL	6.59		
90% Chebyshev(Mean, Sd) UCL	7.932	95% Chebyshev(Mean, Sd) UCL	9.176
97.5% Chebyshev(Mean, Sd) UCL	10.9	99% Chebyshev(Mean, Sd) UCL	14.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.02	Mean	3.919
Maximum	4.98	Median	3.865
SD	0.861	Std. Error of Mean	0.352
Coefficient of Variation	0.22	Skewness	0.125
Mean of logged Data	1.346	SD of logged Data	0.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.628	95% Adjusted-CLT UCL (Chen-1995)	4.517
		95% Modified-t UCL (Johnson-1978)	4.631

Nonparametric Distribution Free UCLs

95% CLT UCL	4.497	95% Jackknife UCL	4.628
95% Standard Bootstrap UCL	4.448	95% Bootstrap-t UCL	4.713
95% Hall's Bootstrap UCL	4.249	95% Percentile Bootstrap UCL	4.471
95% BCA Bootstrap UCL	4.447		
90% Chebyshev(Mean, Sd) UCL	4.974	95% Chebyshev(Mean, Sd) UCL	5.452
97.5% Chebyshev(Mean, Sd) UCL	6.115	99% Chebyshev(Mean, Sd) UCL	7.417

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.965	Mean	2.482
Maximum	3.02	Median	2.468
SD	0.48	Std. Error of Mean	0.196
Coefficient of Variation	0.194	Skewness	0.0318
Mean of logged Data	0.893	SD of logged Data	0.195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.877	95% Adjusted-CLT UCL (Chen-1995)	2.807
		95% Modified-t UCL (Johnson-1978)	2.877

Nonparametric Distribution Free UCLs

95% CLT UCL	2.804	95% Jackknife UCL	2.877
95% Standard Bootstrap UCL	2.777	95% Bootstrap-t UCL	2.903
95% Hall's Bootstrap UCL	2.661	95% Percentile Bootstrap UCL	2.787
95% BCA Bootstrap UCL	2.788		
90% Chebyshev(Mean, Sd) UCL	3.07	95% Chebyshev(Mean, Sd) UCL	3.336
97.5% Chebyshev(Mean, Sd) UCL	3.706	99% Chebyshev(Mean, Sd) UCL	4.432

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.965	Mean	5.437
Maximum	10.1	Median	4.428
SD	3.886	Std. Error of Mean	1.586
Coefficient of Variation	0.715	Skewness	0.313
Mean of logged Data	1.44	SD of logged Data	0.804

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.634	95% Adjusted-CLT UCL (Chen-1995)	8.263
		95% Modified-t UCL (Johnson-1978)	8.667

Nonparametric Distribution Free UCLs

95% CLT UCL	8.046	95% Jackknife UCL	8.634
95% Standard Bootstrap UCL	7.826	95% Bootstrap-t UCL	10.7
95% Hall's Bootstrap UCL	7.768	95% Percentile Bootstrap UCL	7.968
95% BCA Bootstrap UCL	8.045		
90% Chebyshev(Mean, Sd) UCL	10.2	95% Chebyshev(Mean, Sd) UCL	12.35
97.5% Chebyshev(Mean, Sd) UCL	15.34	99% Chebyshev(Mean, Sd) UCL	21.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.95	Mean	3.107
Maximum	3.27	Median	3.095
SD	0.126	Std. Error of Mean	0.0515
Coefficient of Variation	0.0406	Skewness	0.0925
Mean of logged Data	1.133	SD of logged Data	0.0406

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.21	95% Adjusted-CLT UCL (Chen-1995)	3.193
		95% Modified-t UCL (Johnson-1978)	3.211

Nonparametric Distribution Free UCLs

95% CLT UCL	3.191	95% Jackknife UCL	3.21
95% Standard Bootstrap UCL	3.181	95% Bootstrap-t UCL	3.235
95% Hall's Bootstrap UCL	3.171	95% Percentile Bootstrap UCL	3.184
95% BCA Bootstrap UCL	3.18		
90% Chebyshev(Mean, Sd) UCL	3.261	95% Chebyshev(Mean, Sd) UCL	3.331
97.5% Chebyshev(Mean, Sd) UCL	3.428	99% Chebyshev(Mean, Sd) UCL	3.619

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.98	Mean	5.589
Maximum	10.4	Median	5.208
SD	3.936	Std. Error of Mean	1.607
Coefficient of Variation	0.704	Skewness	0.138
Mean of logged Data	1.463	SD of logged Data	0.818

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.827	95% Adjusted-CLT UCL (Chen-1995)	8.329
		95% Modified-t UCL (Johnson-1978)	8.842

Nonparametric Distribution Free UCLs

95% CLT UCL	8.232	95% Jackknife UCL	8.827
95% Standard Bootstrap UCL	8.016	95% Bootstrap-t UCL	9.419
95% Hall's Bootstrap UCL	6.968	95% Percentile Bootstrap UCL	8.085
95% BCA Bootstrap UCL	8.031		
90% Chebyshev(Mean, Sd) UCL	10.41	95% Chebyshev(Mean, Sd) UCL	12.59
97.5% Chebyshev(Mean, Sd) UCL	15.62	99% Chebyshev(Mean, Sd) UCL	21.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.954	Mean	1.277
Maximum	1.71	Median	1.238
SD	0.246	Std. Error of Mean	0.1
Coefficient of Variation	0.193	Skewness	0.957
Mean of logged Data	0.229	SD of logged Data	0.187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.479	95% Adjusted-CLT UCL (Chen-1995)	1.483
		95% Modified-t UCL (Johnson-1978)	1.485

Nonparametric Distribution Free UCLs

95% CLT UCL	1.442	95% Jackknife UCL	1.479
95% Standard Bootstrap UCL	1.427	95% Bootstrap-t UCL	1.525
95% Hall's Bootstrap UCL	2.575	95% Percentile Bootstrap UCL	1.419
95% BCA Bootstrap UCL	1.451		
90% Chebyshev(Mean, Sd) UCL	1.578	95% Chebyshev(Mean, Sd) UCL	1.714
97.5% Chebyshev(Mean, Sd) UCL	1.903	99% Chebyshev(Mean, Sd) UCL	2.275

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.02	Mean	3.758
Maximum	4.64	Median	3.715
SD	0.687	Std. Error of Mean	0.28
Coefficient of Variation	0.183	Skewness	0.165
Mean of logged Data	1.31	SD of logged Data	0.183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.322	95% Adjusted-CLT UCL (Chen-1995)	4.239
		95% Modified-t UCL (Johnson-1978)	4.325

Nonparametric Distribution Free UCLs

95% CLT UCL	4.219	95% Jackknife UCL	4.322
95% Standard Bootstrap UCL	4.179	95% Bootstrap-t UCL	4.376
95% Hall's Bootstrap UCL	4.036	95% Percentile Bootstrap UCL	4.173
95% BCA Bootstrap UCL	4.176		
90% Chebyshev(Mean, Sd) UCL	4.598	95% Chebyshev(Mean, Sd) UCL	4.979
97.5% Chebyshev(Mean, Sd) UCL	5.508	99% Chebyshev(Mean, Sd) UCL	6.546

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.905	Mean	3.416
Maximum	4.91	Median	4.483
SD	1.929	Std. Error of Mean	0.788
Coefficient of Variation	0.565	Skewness	-0.936
Mean of logged Data	1.002	SD of logged Data	0.83

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	5.003	95% Adjusted-CLT UCL (Chen-1995)	4.39
		95% Modified-t UCL (Johnson-1978)	4.953

Nonparametric Distribution Free UCLs

95% CLT UCL	4.711	95% Jackknife UCL	5.003
95% Standard Bootstrap UCL	4.592	95% Bootstrap-t UCL	4.673
95% Hall's Bootstrap UCL	4.199	95% Percentile Bootstrap UCL	4.66
95% BCA Bootstrap UCL	4.191		
90% Chebyshev(Mean, Sd) UCL	5.778	95% Chebyshev(Mean, Sd) UCL	6.849
97.5% Chebyshev(Mean, Sd) UCL	8.334	99% Chebyshev(Mean, Sd) UCL	11.25

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.849

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.02	Mean	4.154
Maximum	6.32	Median	3.805
SD	1.281	Std. Error of Mean	0.523
Coefficient of Variation	0.308	Skewness	1.047
Mean of logged Data	1.387	SD of logged Data	0.291

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.208	95% Adjusted-CLT UCL (Chen-1995)	5.253
		95% Modified-t UCL (Johnson-1978)	5.245

Nonparametric Distribution Free UCLs

95% CLT UCL	5.014	95% Jackknife UCL	5.208
95% Standard Bootstrap UCL	4.942	95% Bootstrap-t UCL	6.2
95% Hall's Bootstrap UCL	5.303	95% Percentile Bootstrap UCL	4.978
95% BCA Bootstrap UCL	5.188		
90% Chebyshev(Mean, Sd) UCL	5.723	95% Chebyshev(Mean, Sd) UCL	6.433
97.5% Chebyshev(Mean, Sd) UCL	7.42	99% Chebyshev(Mean, Sd) UCL	9.357

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.02	Mean	5.413
Maximum	8.28	Median	5.215
SD	2.504	Std. Error of Mean	1.022
Coefficient of Variation	0.463	Skewness	0.0806
Mean of logged Data	1.592	SD of logged Data	0.49

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.472	95% Adjusted-CLT UCL (Chen-1995)	7.13
		95% Modified-t UCL (Johnson-1978)	7.478

Nonparametric Distribution Free UCLs

95% CLT UCL	7.094	95% Jackknife UCL	7.472
95% Standard Bootstrap UCL	6.949	95% Bootstrap-t UCL	7.813
95% Hall's Bootstrap UCL	6.279	95% Percentile Bootstrap UCL	7.025
95% BCA Bootstrap UCL	6.913		
90% Chebyshev(Mean, Sd) UCL	8.479	95% Chebyshev(Mean, Sd) UCL	9.868
97.5% Chebyshev(Mean, Sd) UCL	11.8	99% Chebyshev(Mean, Sd) UCL	15.58

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:40:07 AM
From File	4549A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	13.13
Maximum	14.3	Median	13.25
SD	1.264	Std. Error of Mean	0.516
Coefficient of Variation	0.0963	Skewness	-1.469
Mean of logged Data	2.571	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.17	95% Adjusted-CLT UCL (Chen-1995)	13.65
		95% Modified-t UCL (Johnson-1978)	14.12

Nonparametric Distribution Free UCLs

95% CLT UCL	13.98	95% Jackknife UCL	14.17
95% Standard Bootstrap UCL	13.92	95% Bootstrap-t UCL	13.93
95% Hall's Bootstrap UCL	13.71	95% Percentile Bootstrap UCL	13.85
95% BCA Bootstrap UCL	13.72		
90% Chebyshev(Mean, Sd) UCL	14.68	95% Chebyshev(Mean, Sd) UCL	15.38
97.5% Chebyshev(Mean, Sd) UCL	16.36	99% Chebyshev(Mean, Sd) UCL	18.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.27	Mean	15.11
Maximum	20.9	Median	15.45
SD	5.2	Std. Error of Mean	2.123
Coefficient of Variation	0.344	Skewness	-0.0346

Mean of logged Data	2.663	SD of logged Data	0.361

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.39	95% Adjusted-CLT UCL (Chen-1995)	18.57
		95% Modified-t UCL (Johnson-1978)	19.38

Nonparametric Distribution Free UCLs

95% CLT UCL	18.6	95% Jackknife UCL	19.39
95% Standard Bootstrap UCL	18.32	95% Bootstrap-t UCL	19.6
95% Hall's Bootstrap UCL	17.12	95% Percentile Bootstrap UCL	18.3
95% BCA Bootstrap UCL	18.4		
90% Chebyshev(Mean, Sd) UCL	21.48	95% Chebyshev(Mean, Sd) UCL	24.37
97.5% Chebyshev(Mean, Sd) UCL	28.37	99% Chebyshev(Mean, Sd) UCL	36.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.7	Mean	68.68
Maximum	90.9	Median	69.15
SD	21.5	Std. Error of Mean	8.777
Coefficient of Variation	0.313	Skewness	-0.128
Mean of logged Data	4.186	SD of logged Data	0.33

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	86.37	95% Adjusted-CLT UCL (Chen-1995)	82.63
		95% Modified-t UCL (Johnson-1978)	86.29

Nonparametric Distribution Free UCLs

95% CLT UCL	83.12	95% Jackknife UCL	86.37
95% Standard Bootstrap UCL	81.96	95% Bootstrap-t UCL	87
95% Hall's Bootstrap UCL	77.39	95% Percentile Bootstrap UCL	82
95% BCA Bootstrap UCL	81.67		

90% Chebyshev(Mean, Sd) UCL	95.01	95% Chebyshev(Mean, Sd) UCL	106.9
97.5% Chebyshev(Mean, Sd) UCL	123.5	99% Chebyshev(Mean, Sd) UCL	156

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.88	Mean	1.712
Maximum	2.42	Median	1.685
SD	0.501	Std. Error of Mean	0.205
Coefficient of Variation	0.293	Skewness	-0.492
Mean of logged Data	0.495	SD of logged Data	0.338

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.124	95% Adjusted-CLT UCL (Chen-1995)	2.004
		95% Modified-t UCL (Johnson-1978)	2.117

Nonparametric Distribution Free UCLs

95% CLT UCL	2.048	95% Jackknife UCL	2.124
95% Standard Bootstrap UCL	2.022	95% Bootstrap-t UCL	2.086
95% Hall's Bootstrap UCL	2.102	95% Percentile Bootstrap UCL	2.018
95% BCA Bootstrap UCL	1.978		
90% Chebyshev(Mean, Sd) UCL	2.326	95% Chebyshev(Mean, Sd) UCL	2.604
97.5% Chebyshev(Mean, Sd) UCL	2.99	99% Chebyshev(Mean, Sd) UCL	3.748

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	0.442	Mean	0.592
Maximum	1.04	Median	0.525
SD	0.222	Std. Error of Mean	0.0906
Coefficient of Variation	0.375	Skewness	2.318
Mean of logged Data	-0.569	SD of logged Data	0.306

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.775	95% Adjusted-CLT UCL (Chen-1995)	0.833
		95% Modified-t UCL (Johnson-1978)	0.789

Nonparametric Distribution Free UCLs

95% CLT UCL	0.741	95% Jackknife UCL	0.775
95% Standard Bootstrap UCL	0.73	95% Bootstrap-t UCL	1.532
95% Hall's Bootstrap UCL	1.709	95% Percentile Bootstrap UCL	0.767
95% BCA Bootstrap UCL	0.782		
90% Chebyshev(Mean, Sd) UCL	0.864	95% Chebyshev(Mean, Sd) UCL	0.987
97.5% Chebyshev(Mean, Sd) UCL	1.158	99% Chebyshev(Mean, Sd) UCL	1.494

Suggested UCL to Use

95% Student's-t UCL	0.775	or 95% Modified-t UCL	0.789

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.62	Mean	4.323
Maximum	10.5	Median	3.12
SD	3.36	Std. Error of Mean	1.372
Coefficient of Variation	0.777	Skewness	1.553
Mean of logged Data	1.242	SD of logged Data	0.71

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.086	95% Adjusted-CLT UCL (Chen-1995)	7.508
		95% Modified-t UCL (Johnson-1978)	7.231

Nonparametric Distribution Free UCLs

95% CLT UCL	6.579	95% Jackknife UCL	7.086
95% Standard Bootstrap UCL	6.324	95% Bootstrap-t UCL	9.271

95% Hall's Bootstrap UCL	16.01	95% Percentile Bootstrap UCL	6.556
95% BCA Bootstrap UCL	6.869		
90% Chebyshev(Mean, Sd) UCL	8.438	95% Chebyshev(Mean, Sd) UCL	10.3
97.5% Chebyshev(Mean, Sd) UCL	12.89	99% Chebyshev(Mean, Sd) UCL	17.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.02	Mean	9.533
Maximum	23.6	Median	8.87
SD	8.033	Std. Error of Mean	3.279
Coefficient of Variation	0.843	Skewness	1.134
Mean of logged Data	1.904	SD of logged Data	0.978

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.14	95% Adjusted-CLT UCL (Chen-1995)	16.55
		95% Modified-t UCL (Johnson-1978)	16.39

Nonparametric Distribution Free UCLs

95% CLT UCL	14.93	95% Jackknife UCL	16.14
95% Standard Bootstrap UCL	14.49	95% Bootstrap-t UCL	18.6
95% Hall's Bootstrap UCL	20.27	95% Percentile Bootstrap UCL	14.52
95% BCA Bootstrap UCL	15.43		
90% Chebyshev(Mean, Sd) UCL	19.37	95% Chebyshev(Mean, Sd) UCL	23.83
97.5% Chebyshev(Mean, Sd) UCL	30.01	99% Chebyshev(Mean, Sd) UCL	42.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.51	Mean	16.03
Maximum	38.1	Median	14.43
SD	13.63	Std. Error of Mean	5.566

Coefficient of Variation	0.85	Skewness	0.792
Mean of logged Data	2.4	SD of logged Data	1.002

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.25	95% Adjusted-CLT UCL (Chen-1995)	27.11
		95% Modified-t UCL (Johnson-1978)	27.55

Nonparametric Distribution Free UCLs

95% CLT UCL	25.19	95% Jackknife UCL	27.25
95% Standard Bootstrap UCL	24.49	95% Bootstrap-t UCL	32.17
95% Hall's Bootstrap UCL	24.59	95% Percentile Bootstrap UCL	24.5
95% BCA Bootstrap UCL	26.63		
90% Chebyshev(Mean, Sd) UCL	32.73	95% Chebyshev(Mean, Sd) UCL	40.29
97.5% Chebyshev(Mean, Sd) UCL	50.79	99% Chebyshev(Mean, Sd) UCL	71.41

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.67	Mean	19.05
Maximum	45.5	Median	16.91
SD	16.92	Std. Error of Mean	6.906
Coefficient of Variation	0.888	Skewness	0.668
Mean of logged Data	2.511	SD of logged Data	1.091

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.97	95% Adjusted-CLT UCL (Chen-1995)	32.42
		95% Modified-t UCL (Johnson-1978)	33.28

Nonparametric Distribution Free UCLs

95% CLT UCL	30.41	95% Jackknife UCL	32.97
95% Standard Bootstrap UCL	29.28	95% Bootstrap-t UCL	38.36
95% Hall's Bootstrap UCL	28.45	95% Percentile Bootstrap UCL	29.7
95% BCA Bootstrap UCL	30		
90% Chebyshev(Mean, Sd) UCL	39.77	95% Chebyshev(Mean, Sd) UCL	49.15
97.5% Chebyshev(Mean, Sd) UCL	62.18	99% Chebyshev(Mean, Sd) UCL	87.76

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.255	Mean	11.01
Maximum	25.4	Median	9.205
SD	9.166	Std. Error of Mean	3.742
Coefficient of Variation	0.833	Skewness	0.699
Mean of logged Data	2.053	SD of logged Data	0.943

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.55	95% Adjusted-CLT UCL (Chen-1995)	18.31
		95% Modified-t UCL (Johnson-1978)	18.73

Nonparametric Distribution Free UCLs

95% CLT UCL	17.17	95% Jackknife UCL	18.55
95% Standard Bootstrap UCL	16.51	95% Bootstrap-t UCL	21.24
95% Hall's Bootstrap UCL	16.32	95% Percentile Bootstrap UCL	16.77
95% BCA Bootstrap UCL	18.06		
90% Chebyshev(Mean, Sd) UCL	22.24	95% Chebyshev(Mean, Sd) UCL	27.32
97.5% Chebyshev(Mean, Sd) UCL	34.38	99% Chebyshev(Mean, Sd) UCL	48.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.115	Mean	6.968
Maximum	18.9	Median	5.175
SD	6.523	Std. Error of Mean	2.663
Coefficient of Variation	0.936	Skewness	1.493
Mean of logged Data	1.586	SD of logged Data	0.92

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.33	95% Adjusted-CLT UCL (Chen-1995)	13.08
		95% Modified-t UCL (Johnson-1978)	12.6

Nonparametric Distribution Free UCLs

95% CLT UCL	11.35	95% Jackknife UCL	12.33
95% Standard Bootstrap UCL	10.97	95% Bootstrap-t UCL	16.83
95% Hall's Bootstrap UCL	23.84	95% Percentile Bootstrap UCL	11.53
95% BCA Bootstrap UCL	12.57		
90% Chebyshev(Mean, Sd) UCL	14.96	95% Chebyshev(Mean, Sd) UCL	18.57
97.5% Chebyshev(Mean, Sd) UCL	23.6	99% Chebyshev(Mean, Sd) UCL	33.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.97	Mean	14.97
Maximum	36.9	Median	13.49
SD	12.98	Std. Error of Mean	5.298
Coefficient of Variation	0.867	Skewness	0.975
Mean of logged Data	2.32	SD of logged Data	1.026

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.64	95% Adjusted-CLT UCL (Chen-1995)	25.93
		95% Modified-t UCL (Johnson-1978)	25.99

Nonparametric Distribution Free UCLs

95% CLT UCL	23.68	95% Jackknife UCL	25.64
95% Standard Bootstrap UCL	22.86	95% Bootstrap-t UCL	31.04
95% Hall's Bootstrap UCL	25.18	95% Percentile Bootstrap UCL	23.2
95% BCA Bootstrap UCL	25.21		
90% Chebyshev(Mean, Sd) UCL	30.86	95% Chebyshev(Mean, Sd) UCL	38.06
97.5% Chebyshev(Mean, Sd) UCL	48.05	99% Chebyshev(Mean, Sd) UCL	67.68

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.06	Mean	3.705
Maximum	6.02	Median	3.275
SD	1.138	Std. Error of Mean	0.465
Coefficient of Variation	0.307	Skewness	2.408
Mean of logged Data	1.279	SD of logged Data	0.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.641	95% Adjusted-CLT UCL (Chen-1995)	4.958
		95% Modified-t UCL (Johnson-1978)	4.718

Nonparametric Distribution Free UCLs

95% CLT UCL	4.469	95% Jackknife UCL	4.641
95% Standard Bootstrap UCL	4.39	95% Bootstrap-t UCL	14.04
95% Hall's Bootstrap UCL	12.19	95% Percentile Bootstrap UCL	4.621
95% BCA Bootstrap UCL	4.66		
90% Chebyshev(Mean, Sd) UCL	5.099	95% Chebyshev(Mean, Sd) UCL	5.731
97.5% Chebyshev(Mean, Sd) UCL	6.607	99% Chebyshev(Mean, Sd) UCL	8.329

Suggested UCL to Use

95% Student's-t UCL	4.641	or 95% Modified-t UCL	4.718

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.4	Mean	18.81
Maximum	50.6	Median	15.75
SD	17.78	Std. Error of Mean	7.26
Coefficient of Variation	0.945	Skewness	1.306
Mean of logged Data	2.5	SD of logged Data	1.084

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.44	95% Adjusted-CLT UCL (Chen-1995)	34.89
		95% Modified-t UCL (Johnson-1978)	34.09

Nonparametric Distribution Free UCLs

95% CLT UCL	30.75	95% Jackknife UCL	33.44
95% Standard Bootstrap UCL	29.97	95% Bootstrap-t UCL	42.44
95% Hall's Bootstrap UCL	41.94	95% Percentile Bootstrap UCL	30.43
95% BCA Bootstrap UCL	34.5		
90% Chebyshev(Mean, Sd) UCL	40.59	95% Chebyshev(Mean, Sd) UCL	50.46
97.5% Chebyshev(Mean, Sd) UCL	64.15	99% Chebyshev(Mean, Sd) UCL	91.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.877	Mean	1.217
Maximum	1.33	Median	1.275
SD	0.172	Std. Error of Mean	0.0701
Coefficient of Variation	0.141	Skewness	-2.134
Mean of logged Data	0.187	SD of logged Data	0.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.358	95% Adjusted-CLT UCL (Chen-1995)	1.267
		95% Modified-t UCL (Johnson-1978)	1.348

Nonparametric Distribution Free UCLs

95% CLT UCL	1.332	95% Jackknife UCL	1.358
95% Standard Bootstrap UCL	1.323	95% Bootstrap-t UCL	1.307
95% Hall's Bootstrap UCL	1.283	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.292		
90% Chebyshev(Mean, Sd) UCL	1.427	95% Chebyshev(Mean, Sd) UCL	1.523
97.5% Chebyshev(Mean, Sd) UCL	1.655	99% Chebyshev(Mean, Sd) UCL	1.915

Suggested UCL to Use

95% Student's-t UCL	1.358	or 95% Modified-t UCL	1.348

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.25	Mean	11.91
Maximum	28.2	Median	9.635
SD	10.74	Std. Error of Mean	4.383
Coefficient of Variation	0.902	Skewness	0.608
Mean of logged Data	2.021	SD of logged Data	1.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.74	95% Adjusted-CLT UCL (Chen-1995)	20.28
		95% Modified-t UCL (Johnson-1978)	20.92

Nonparametric Distribution Free UCLs

95% CLT UCL	19.12	95% Jackknife UCL	20.74
95% Standard Bootstrap UCL	18.48	95% Bootstrap-t UCL	22.21
95% Hall's Bootstrap UCL	17.37	95% Percentile Bootstrap UCL	18.37
95% BCA Bootstrap UCL	19.01		
90% Chebyshev(Mean, Sd) UCL	25.06	95% Chebyshev(Mean, Sd) UCL	31.02
97.5% Chebyshev(Mean, Sd) UCL	39.28	99% Chebyshev(Mean, Sd) UCL	55.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.802	Mean	1.408
Maximum	2.54	Median	1.34
SD	0.616	Std. Error of Mean	0.252
Coefficient of Variation	0.438	Skewness	1.434
Mean of logged Data	0.271	SD of logged Data	0.404

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.915	95% Adjusted-CLT UCL (Chen-1995)	1.979
		95% Modified-t UCL (Johnson-1978)	1.94

Nonparametric Distribution Free UCLs

95% CLT UCL	1.822	95% Jackknife UCL	1.915
95% Standard Bootstrap UCL	1.791	95% Bootstrap-t UCL	2.182
95% Hall's Bootstrap UCL	3.712	95% Percentile Bootstrap UCL	1.819
95% BCA Bootstrap UCL	1.899		
90% Chebyshev(Mean, Sd) UCL	2.163	95% Chebyshev(Mean, Sd) UCL	2.505
97.5% Chebyshev(Mean, Sd) UCL	2.98	99% Chebyshev(Mean, Sd) UCL	3.912

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.255	Mean	7.678
Maximum	18.3	Median	6.285
SD	5.693	Std. Error of Mean	2.324
Coefficient of Variation	0.741	Skewness	1.626
Mean of logged Data	1.84	SD of logged Data	0.67

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.36	95% Adjusted-CLT UCL (Chen-1995)	13.15
		95% Modified-t UCL (Johnson-1978)	12.62

Nonparametric Distribution Free UCLs

95% CLT UCL	11.5	95% Jackknife UCL	12.36
95% Standard Bootstrap UCL	11.2	95% Bootstrap-t UCL	16.36
95% Hall's Bootstrap UCL	25.07	95% Percentile Bootstrap UCL	11.58
95% BCA Bootstrap UCL	12.69		
90% Chebyshev(Mean, Sd) UCL	14.65	95% Chebyshev(Mean, Sd) UCL	17.81
97.5% Chebyshev(Mean, Sd) UCL	22.19	99% Chebyshev(Mean, Sd) UCL	30.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.32	Mean	18.45
Maximum	48.2	Median	17.25
SD	16.47	Std. Error of Mean	6.725
Coefficient of Variation	0.893	Skewness	1.316
Mean of logged Data	2.515	SD of logged Data	1.057

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32	95% Adjusted-CLT UCL (Chen-1995)	33.37
		95% Modified-t UCL (Johnson-1978)	32.6

Nonparametric Distribution Free UCLs

95% CLT UCL	29.51	95% Jackknife UCL	32
95% Standard Bootstrap UCL	28.54	95% Bootstrap-t UCL	37.66
95% Hall's Bootstrap UCL	80.22	95% Percentile Bootstrap UCL	29.55
95% BCA Bootstrap UCL	32.27		
90% Chebyshev(Mean, Sd) UCL	38.62	95% Chebyshev(Mean, Sd) UCL	47.76
97.5% Chebyshev(Mean, Sd) UCL	60.45	99% Chebyshev(Mean, Sd) UCL	85.36

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:41:21 AM
From File	04558.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.1	Mean	22.82
Maximum	55.4	Median	16.8
SD	16.09	Std. Error of Mean	6.571
Coefficient of Variation	0.705	Skewness	2.361
Mean of logged Data	2.989	SD of logged Data	0.518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.06	95% Adjusted-CLT UCL (Chen-1995)	40.39
		95% Modified-t UCL (Johnson-1978)	37.11

Nonparametric Distribution Free UCLs

95% CLT UCL	33.62	95% Jackknife UCL	36.06
95% Standard Bootstrap UCL	32.58	95% Bootstrap-t UCL	87.55
95% Hall's Bootstrap UCL	92.45	95% Percentile Bootstrap UCL	35.65
95% BCA Bootstrap UCL	36.5		
90% Chebyshev(Mean, Sd) UCL	42.53	95% Chebyshev(Mean, Sd) UCL	51.46
97.5% Chebyshev(Mean, Sd) UCL	63.85	99% Chebyshev(Mean, Sd) UCL	88.19

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	51.46

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	30.8	Mean	38.52
Maximum	56	Median	35.55
SD	8.953	Std. Error of Mean	3.655
Coefficient of Variation	0.232	Skewness	1.986
Mean of logged Data	3.632	SD of logged Data	0.207

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.88	95% Adjusted-CLT UCL (Chen-1995)	47.7
		95% Modified-t UCL (Johnson-1978)	46.38

Nonparametric Distribution Free UCLs

95% CLT UCL	44.53	95% Jackknife UCL	45.88
95% Standard Bootstrap UCL	44.04	95% Bootstrap-t UCL	57.5
95% Hall's Bootstrap UCL	74.92	95% Percentile Bootstrap UCL	44.97
95% BCA Bootstrap UCL	46.28		
90% Chebyshev(Mean, Sd) UCL	49.48	95% Chebyshev(Mean, Sd) UCL	54.45
97.5% Chebyshev(Mean, Sd) UCL	61.34	99% Chebyshev(Mean, Sd) UCL	74.88

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	63.1	Mean	93.77
Maximum	133	Median	88.9
SD	31.73	Std. Error of Mean	12.95
Coefficient of Variation	0.338	Skewness	0.185
Mean of logged Data	4.492	SD of logged Data	0.344

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	119.9	95% Adjusted-CLT UCL (Chen-1995)	116.1
		95% Modified-t UCL (Johnson-1978)	120

Nonparametric Distribution Free UCLs

95% CLT UCL	115.1	95% Jackknife UCL	119.9
95% Standard Bootstrap UCL	112.9	95% Bootstrap-t UCL	120.3
95% Hall's Bootstrap UCL	105.3	95% Percentile Bootstrap UCL	114
95% BCA Bootstrap UCL	112.8		
90% Chebyshev(Mean, Sd) UCL	132.6	95% Chebyshev(Mean, Sd) UCL	150.2
97.5% Chebyshev(Mean, Sd) UCL	174.7	99% Chebyshev(Mean, Sd) UCL	222.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.753	Mean	2.071
Maximum	3.28	Median	2.33
SD	1.002	Std. Error of Mean	0.409
Coefficient of Variation	0.484	Skewness	-0.358
Mean of logged Data	0.6	SD of logged Data	0.593

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.895	95% Adjusted-CLT UCL (Chen-1995)	2.679
		95% Modified-t UCL (Johnson-1978)	2.885

Nonparametric Distribution Free UCLs

95% CLT UCL	2.743	95% Jackknife UCL	2.895
95% Standard Bootstrap UCL	2.695	95% Bootstrap-t UCL	2.766
95% Hall's Bootstrap UCL	2.565	95% Percentile Bootstrap UCL	2.667
95% BCA Bootstrap UCL	2.615		
90% Chebyshev(Mean, Sd) UCL	3.297	95% Chebyshev(Mean, Sd) UCL	3.853
97.5% Chebyshev(Mean, Sd) UCL	4.624	99% Chebyshev(Mean, Sd) UCL	6.139

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.76	Mean	1.342
Maximum	2.51	Median	1.137
SD	0.673	Std. Error of Mean	0.275
Coefficient of Variation	0.502	Skewness	1.219
Mean of logged Data	0.199	SD of logged Data	0.466

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.895	95% Adjusted-CLT UCL (Chen-1995)	1.939
		95% Modified-t UCL (Johnson-1978)	1.918

Nonparametric Distribution Free UCLs

95% CLT UCL	1.793	95% Jackknife UCL	1.895
95% Standard Bootstrap UCL	1.751	95% Bootstrap-t UCL	2.641
95% Hall's Bootstrap UCL	3.987	95% Percentile Bootstrap UCL	1.782
95% BCA Bootstrap UCL	1.852		
90% Chebyshev(Mean, Sd) UCL	2.165	95% Chebyshev(Mean, Sd) UCL	2.539
97.5% Chebyshev(Mean, Sd) UCL	3.057	99% Chebyshev(Mean, Sd) UCL	4.074

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.26	Mean	5.09
Maximum	12.2	Median	3.67
SD	3.893	Std. Error of Mean	1.589
Coefficient of Variation	0.765	Skewness	1.508
Mean of logged Data	1.412	SD of logged Data	0.699

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.292	95% Adjusted-CLT UCL (Chen-1995)	8.749
		95% Modified-t UCL (Johnson-1978)	8.455

Nonparametric Distribution Free UCLs

95% CLT UCL	7.704	95% Jackknife UCL	8.292
95% Standard Bootstrap UCL	7.437	95% Bootstrap-t UCL	10.31
95% Hall's Bootstrap UCL	18	95% Percentile Bootstrap UCL	7.708
95% BCA Bootstrap UCL	8.15		
90% Chebyshev(Mean, Sd) UCL	9.857	95% Chebyshev(Mean, Sd) UCL	12.02
97.5% Chebyshev(Mean, Sd) UCL	15.01	99% Chebyshev(Mean, Sd) UCL	20.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21	Mean	56.32
Maximum	128	Median	43.75
SD	40.3	Std. Error of Mean	16.45
Coefficient of Variation	0.716	Skewness	1.341
Mean of logged Data	3.833	SD of logged Data	0.681

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	89.47	95% Adjusted-CLT UCL (Chen-1995)	93
		95% Modified-t UCL (Johnson-1978)	90.97

Nonparametric Distribution Free UCLs

95% CLT UCL	83.38	95% Jackknife UCL	89.47
95% Standard Bootstrap UCL	81.16	95% Bootstrap-t UCL	112.7
95% Hall's Bootstrap UCL	211.2	95% Percentile Bootstrap UCL	82.08
95% BCA Bootstrap UCL	88.97		
90% Chebyshev(Mean, Sd) UCL	105.7	95% Chebyshev(Mean, Sd) UCL	128
97.5% Chebyshev(Mean, Sd) UCL	159.1	99% Chebyshev(Mean, Sd) UCL	220

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	28.8	Mean	68.67
Maximum	137	Median	56.35
SD	41.69	Std. Error of Mean	17.02
Coefficient of Variation	0.607	Skewness	0.952
Mean of logged Data	4.078	SD of logged Data	0.601

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	103	95% Adjusted-CLT UCL (Chen-1995)	103.7
		95% Modified-t UCL (Johnson-1978)	104.1

Nonparametric Distribution Free UCLs

95% CLT UCL	96.66	95% Jackknife UCL	103
95% Standard Bootstrap UCL	94.09	95% Bootstrap-t UCL	141.7
95% Hall's Bootstrap UCL	125.4	95% Percentile Bootstrap UCL	96.25
95% BCA Bootstrap UCL	98.05		
90% Chebyshev(Mean, Sd) UCL	119.7	95% Chebyshev(Mean, Sd) UCL	142.9
97.5% Chebyshev(Mean, Sd) UCL	175	99% Chebyshev(Mean, Sd) UCL	238

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.9	Mean	97.08
Maximum	193	Median	80.45
SD	59.2	Std. Error of Mean	24.17
Coefficient of Variation	0.61	Skewness	0.888
Mean of logged Data	4.42	SD of logged Data	0.611

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	145.8	95% Adjusted-CLT UCL (Chen-1995)	146.2
		95% Modified-t UCL (Johnson-1978)	147.2

Nonparametric Distribution Free UCLs

95% CLT UCL	136.8	95% Jackknife UCL	145.8
95% Standard Bootstrap UCL	133.4	95% Bootstrap-t UCL	162.8
95% Hall's Bootstrap UCL	166.9	95% Percentile Bootstrap UCL	134.6
95% BCA Bootstrap UCL	136.8		
90% Chebyshev(Mean, Sd) UCL	169.6	95% Chebyshev(Mean, Sd) UCL	202.4
97.5% Chebyshev(Mean, Sd) UCL	248	99% Chebyshev(Mean, Sd) UCL	337.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19	Mean	44.92
Maximum	81.2	Median	39.15
SD	25.33	Std. Error of Mean	10.34
Coefficient of Variation	0.564	Skewness	0.463
Mean of logged Data	3.662	SD of logged Data	0.594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	65.76	95% Adjusted-CLT UCL (Chen-1995)	64.02
		95% Modified-t UCL (Johnson-1978)	66.08

Nonparametric Distribution Free UCLs

95% CLT UCL	61.93	95% Jackknife UCL	65.76
95% Standard Bootstrap UCL	60.48	95% Bootstrap-t UCL	67.22
95% Hall's Bootstrap UCL	58.15	95% Percentile Bootstrap UCL	61.4
95% BCA Bootstrap UCL	61.92		
90% Chebyshev(Mean, Sd) UCL	75.94	95% Chebyshev(Mean, Sd) UCL	90
97.5% Chebyshev(Mean, Sd) UCL	109.5	99% Chebyshev(Mean, Sd) UCL	147.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.2	Mean	35.42
Maximum	77.4	Median	28.55
SD	24.09	Std. Error of Mean	9.833
Coefficient of Variation	0.68	Skewness	1.204
Mean of logged Data	3.382	SD of logged Data	0.663

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.23	95% Adjusted-CLT UCL (Chen-1995)	56.76

		95% Modified-t UCL (Johnson-1978)	56.04

Nonparametric Distribution Free UCLs

95% CLT UCL	51.59	95% Jackknife UCL	55.23
95% Standard Bootstrap UCL	49.99	95% Bootstrap-t UCL	63.51
95% Hall's Bootstrap UCL	110.9	95% Percentile Bootstrap UCL	51.7
95% BCA Bootstrap UCL	52.52		
90% Chebyshev(Mean, Sd) UCL	64.92	95% Chebyshev(Mean, Sd) UCL	78.28
97.5% Chebyshev(Mean, Sd) UCL	96.83	99% Chebyshev(Mean, Sd) UCL	133.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	27.7	Mean	70.87
Maximum	151	Median	58
SD	46.89	Std. Error of Mean	19.14
Coefficient of Variation	0.662	Skewness	1.099
Mean of logged Data	4.083	SD of logged Data	0.651

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	109.4	95% Adjusted-CLT UCL (Chen-1995)	111.5
		95% Modified-t UCL (Johnson-1978)	110.9

Nonparametric Distribution Free UCLs

95% CLT UCL	102.4	95% Jackknife UCL	109.4
95% Standard Bootstrap UCL	99.81	95% Bootstrap-t UCL	148.2
95% Hall's Bootstrap UCL	128.5	95% Percentile Bootstrap UCL	101.2
95% BCA Bootstrap UCL	103.7		
90% Chebyshev(Mean, Sd) UCL	128.3	95% Chebyshev(Mean, Sd) UCL	154.3
97.5% Chebyshev(Mean, Sd) UCL	190.4	99% Chebyshev(Mean, Sd) UCL	261.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.63	Mean	13.54
Maximum	26.8	Median	11.3
SD	8.265	Std. Error of Mean	3.374
Coefficient of Variation	0.61	Skewness	0.833
Mean of logged Data	2.448	SD of logged Data	0.616

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.34	95% Adjusted-CLT UCL (Chen-1995)	20.32
		95% Modified-t UCL (Johnson-1978)	20.53

Nonparametric Distribution Free UCLs

95% CLT UCL	19.09	95% Jackknife UCL	20.34
95% Standard Bootstrap UCL	18.6	95% Bootstrap-t UCL	21.73
95% Hall's Bootstrap UCL	20.93	95% Percentile Bootstrap UCL	18.87
95% BCA Bootstrap UCL	19.2		
90% Chebyshev(Mean, Sd) UCL	23.66	95% Chebyshev(Mean, Sd) UCL	28.25
97.5% Chebyshev(Mean, Sd) UCL	34.61	99% Chebyshev(Mean, Sd) UCL	47.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	30.5	Mean	72.55
Maximum	166	Median	54.75
SD	52.48	Std. Error of Mean	21.43
Coefficient of Variation	0.723	Skewness	1.356
Mean of logged Data	4.085	SD of logged Data	0.677

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	115.7	95% Adjusted-CLT UCL (Chen-1995)	120.5
		95% Modified-t UCL (Johnson-1978)	117.7

Nonparametric Distribution Free UCLs

95% CLT UCL	107.8	95% Jackknife UCL	115.7

95% Standard Bootstrap UCL	104.5	95% Bootstrap-t UCL	181.2
95% Hall's Bootstrap UCL	253.4	95% Percentile Bootstrap UCL	109.6
95% BCA Bootstrap UCL	113.1		
90% Chebyshev(Mean, Sd) UCL	136.8	95% Chebyshev(Mean, Sd) UCL	165.9
97.5% Chebyshev(Mean, Sd) UCL	206.4	99% Chebyshev(Mean, Sd) UCL	285.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.995	Mean	2.028
Maximum	2.93	Median	2.005
SD	0.865	Std. Error of Mean	0.353
Coefficient of Variation	0.426	Skewness	-0.0392
Mean of logged Data	0.623	SD of logged Data	0.462

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.74	95% Adjusted-CLT UCL (Chen-1995)	2.603
		95% Modified-t UCL (Johnson-1978)	2.739

Nonparametric Distribution Free UCLs

95% CLT UCL	2.609	95% Jackknife UCL	2.74
95% Standard Bootstrap UCL	2.57	95% Bootstrap-t UCL	2.694
95% Hall's Bootstrap UCL	2.389	95% Percentile Bootstrap UCL	2.593
95% BCA Bootstrap UCL	2.55		
90% Chebyshev(Mean, Sd) UCL	3.087	95% Chebyshev(Mean, Sd) UCL	3.567
97.5% Chebyshev(Mean, Sd) UCL	4.233	99% Chebyshev(Mean, Sd) UCL	5.541

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	19.7	Mean	48.63
Maximum	94.3	Median	41.1
SD	28.91	Std. Error of Mean	11.8
Coefficient of Variation	0.594	Skewness	0.753
Mean of logged Data	3.732	SD of logged Data	0.609

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	72.41	95% Adjusted-CLT UCL (Chen-1995)	71.92
		95% Modified-t UCL (Johnson-1978)	73.02

Nonparametric Distribution Free UCLs

95% CLT UCL	68.05	95% Jackknife UCL	72.41
95% Standard Bootstrap UCL	66.08	95% Bootstrap-t UCL	76.58
95% Hall's Bootstrap UCL	67.8	95% Percentile Bootstrap UCL	67.77
95% BCA Bootstrap UCL	69.75		
90% Chebyshev(Mean, Sd) UCL	84.04	95% Chebyshev(Mean, Sd) UCL	100.1
97.5% Chebyshev(Mean, Sd) UCL	122.3	99% Chebyshev(Mean, Sd) UCL	166.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.43	Mean	3.578
Maximum	5.97	Median	3.875
SD	1.685	Std. Error of Mean	0.688
Coefficient of Variation	0.471	Skewness	0.00949
Mean of logged Data	1.163	SD of logged Data	0.545

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.965	95% Adjusted-CLT UCL (Chen-1995)	4.713
		95% Modified-t UCL (Johnson-1978)	4.965

Nonparametric Distribution Free UCLs

95% CLT UCL	4.71	95% Jackknife UCL	4.965
95% Standard Bootstrap UCL	4.582	95% Bootstrap-t UCL	4.811

95% Hall's Bootstrap UCL	4.569	95% Percentile Bootstrap UCL	4.647
95% BCA Bootstrap UCL	4.487		
90% Chebyshev(Mean, Sd) UCL	5.642	95% Chebyshev(Mean, Sd) UCL	6.577
97.5% Chebyshev(Mean, Sd) UCL	7.875	99% Chebyshev(Mean, Sd) UCL	10.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.3	Mean	20.8
Maximum	44.7	Median	15.65
SD	13.63	Std. Error of Mean	5.564
Coefficient of Variation	0.655	Skewness	1.288
Mean of logged Data	2.873	SD of logged Data	0.609

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.01	95% Adjusted-CLT UCL (Chen-1995)	33.08
		95% Modified-t UCL (Johnson-1978)	32.5

Nonparametric Distribution Free UCLs

95% CLT UCL	29.95	95% Jackknife UCL	32.01
95% Standard Bootstrap UCL	28.86	95% Bootstrap-t UCL	39.76
95% Hall's Bootstrap UCL	68.38	95% Percentile Bootstrap UCL	29.33
95% BCA Bootstrap UCL	30.83		
90% Chebyshev(Mean, Sd) UCL	37.49	95% Chebyshev(Mean, Sd) UCL	45.05
97.5% Chebyshev(Mean, Sd) UCL	55.55	99% Chebyshev(Mean, Sd) UCL	76.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	32.5	Mean	74.82
Maximum	160	Median	57.9
SD	49.63	Std. Error of Mean	20.26

Coefficient of Variation	0.663	Skewness	1.171
Mean of logged Data	4.143	SD of logged Data	0.634

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	115.6	95% Adjusted-CLT UCL (Chen-1995)	118.5
		95% Modified-t UCL (Johnson-1978)	117.3

Nonparametric Distribution Free UCLs

95% CLT UCL	108.1	95% Jackknife UCL	115.6
95% Standard Bootstrap UCL	105.5	95% Bootstrap-t UCL	140.2
95% Hall's Bootstrap UCL	234.3	95% Percentile Bootstrap UCL	108
95% BCA Bootstrap UCL	112.3		
90% Chebyshev(Mean, Sd) UCL	135.6	95% Chebyshev(Mean, Sd) UCL	163.1
97.5% Chebyshev(Mean, Sd) UCL	201.4	99% Chebyshev(Mean, Sd) UCL	276.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:48:51 PM
From File	04588.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.4	Mean	13.52
Maximum	19.5	Median	12.15
SD	3.049	Std. Error of Mean	1.245
Coefficient of Variation	0.226	Skewness	2.077
Mean of logged Data	2.586	SD of logged Data	0.2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.02	95% Adjusted-CLT UCL (Chen-1995)	16.69
		95% Modified-t UCL (Johnson-1978)	16.2

Nonparametric Distribution Free UCLs

95% CLT UCL	15.56	95% Jackknife UCL	16.02
95% Standard Bootstrap UCL	15.37	95% Bootstrap-t UCL	28.15
95% Hall's Bootstrap UCL	36.98	95% Percentile Bootstrap UCL	15.7
95% BCA Bootstrap UCL	16.38		
90% Chebyshev(Mean, Sd) UCL	17.25	95% Chebyshev(Mean, Sd) UCL	18.94
97.5% Chebyshev(Mean, Sd) UCL	21.29	99% Chebyshev(Mean, Sd) UCL	25.9

Suggested UCL to Use

95% Student's-t UCL	16.02	or 95% Modified-t UCL	16.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.88	Mean	9.832
Maximum	11	Median	9.74
SD	0.925	Std. Error of Mean	0.378
Coefficient of Variation	0.0941	Skewness	0.203
Mean of logged Data	2.282	SD of logged Data	0.0938

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.59	95% Adjusted-CLT UCL (Chen-1995)	10.49
		95% Modified-t UCL (Johnson-1978)	10.6

Nonparametric Distribution Free UCLs

95% CLT UCL	10.45	95% Jackknife UCL	10.59
95% Standard Bootstrap UCL	10.39	95% Bootstrap-t UCL	10.56
95% Hall's Bootstrap UCL	10.32	95% Percentile Bootstrap UCL	10.41
95% BCA Bootstrap UCL	10.42		
90% Chebyshev(Mean, Sd) UCL	10.96	95% Chebyshev(Mean, Sd) UCL	11.48
97.5% Chebyshev(Mean, Sd) UCL	12.19	99% Chebyshev(Mean, Sd) UCL	13.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.8	Mean	54.13
Maximum	67.5	Median	53.5
SD	12.44	Std. Error of Mean	5.08
Coefficient of Variation	0.23	Skewness	0.0405
Mean of logged Data	3.969	SD of logged Data	0.233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.37	95% Adjusted-CLT UCL (Chen-1995)	62.58
		95% Modified-t UCL (Johnson-1978)	64.38

Nonparametric Distribution Free UCLs

95% CLT UCL	62.49	95% Jackknife UCL	64.37
95% Standard Bootstrap UCL	61.66	95% Bootstrap-t UCL	65.73
95% Hall's Bootstrap UCL	58.47	95% Percentile Bootstrap UCL	62.03
95% BCA Bootstrap UCL	61.87		
90% Chebyshev(Mean, Sd) UCL	69.37	95% Chebyshev(Mean, Sd) UCL	76.28
97.5% Chebyshev(Mean, Sd) UCL	85.86	99% Chebyshev(Mean, Sd) UCL	104.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.31	Mean	2.438
Maximum	3.6	Median	2.42
SD	0.839	Std. Error of Mean	0.342
Coefficient of Variation	0.344	Skewness	0.0582
Mean of logged Data	0.838	SD of logged Data	0.368

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.128	95% Adjusted-CLT UCL (Chen-1995)	3.01
		95% Modified-t UCL (Johnson-1978)	3.13

Nonparametric Distribution Free UCLs

95% CLT UCL	3.002	95% Jackknife UCL	3.128
95% Standard Bootstrap UCL	2.96	95% Bootstrap-t UCL	3.215
95% Hall's Bootstrap UCL	2.961	95% Percentile Bootstrap UCL	2.965
95% BCA Bootstrap UCL	2.94		
90% Chebyshev(Mean, Sd) UCL	3.465	95% Chebyshev(Mean, Sd) UCL	3.931
97.5% Chebyshev(Mean, Sd) UCL	4.577	99% Chebyshev(Mean, Sd) UCL	5.845

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.51	Mean	0.521
Maximum	0.53	Median	0.523
SD	0.00917	Std. Error of Mean	0.00375
Coefficient of Variation	0.0176	Skewness	-0.362
Mean of logged Data	-0.652	SD of logged Data	0.0177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.528	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.528

Nonparametric Distribution Free UCLs

95% CLT UCL	0.527	95% Jackknife UCL	0.528
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.532	95% Chebyshev(Mean, Sd) UCL	0.537
97.5% Chebyshev(Mean, Sd) UCL	0.544	99% Chebyshev(Mean, Sd) UCL	0.558

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.08	Mean	3.714
Maximum	11.7	Median	2.133
SD	3.912	Std. Error of Mean	1.597
Coefficient of Variation	1.053	Skewness	2.449
Mean of logged Data	1.035	SD of logged Data	0.698

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.933	95% Adjusted-CLT UCL (Chen-1995)	8.048
		95% Modified-t UCL (Johnson-1978)	7.199

Nonparametric Distribution Free UCLs

95% CLT UCL	6.341	95% Jackknife UCL	6.933
95% Standard Bootstrap UCL	6.086	95% Bootstrap-t UCL	231.8
95% Hall's Bootstrap UCL	154.4	95% Percentile Bootstrap UCL	6.903
95% BCA Bootstrap UCL	6.917		
90% Chebyshev(Mean, Sd) UCL	8.506	95% Chebyshev(Mean, Sd) UCL	10.68
97.5% Chebyshev(Mean, Sd) UCL	13.69	99% Chebyshev(Mean, Sd) UCL	19.61

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.68

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	13.33
Maximum	60.6	Median	3.065
SD	23.31	Std. Error of Mean	9.517
Coefficient of Variation	1.749	Skewness	2.381
Mean of logged Data	1.658	SD of logged Data	1.327

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.5	95% Adjusted-CLT UCL (Chen-1995)	38.86
		95% Modified-t UCL (Johnson-1978)	34.05

Nonparametric Distribution Free UCLs

95% CLT UCL	28.98	95% Jackknife UCL	32.5
95% Standard Bootstrap UCL	27.65	95% Bootstrap-t UCL	274.1
95% Hall's Bootstrap UCL	353	95% Percentile Bootstrap UCL	31.67
95% BCA Bootstrap UCL	41.09		
90% Chebyshev(Mean, Sd) UCL	41.88	95% Chebyshev(Mean, Sd) UCL	54.81
97.5% Chebyshev(Mean, Sd) UCL	72.76	99% Chebyshev(Mean, Sd) UCL	108

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	13.29
Maximum	57.1	Median	3.705
SD	21.74	Std. Error of Mean	8.875
Coefficient of Variation	1.636	Skewness	2.318
Mean of logged Data	1.728	SD of logged Data	1.316

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.17	95% Adjusted-CLT UCL (Chen-1995)	36.86
		95% Modified-t UCL (Johnson-1978)	32.57

Nonparametric Distribution Free UCLs

95% CLT UCL	27.89	95% Jackknife UCL	31.17
95% Standard Bootstrap UCL	26.42	95% Bootstrap-t UCL	150.5
95% Hall's Bootstrap UCL	200.9	95% Percentile Bootstrap UCL	29.63
95% BCA Bootstrap UCL	32.56		
90% Chebyshev(Mean, Sd) UCL	39.91	95% Chebyshev(Mean, Sd) UCL	51.97
97.5% Chebyshev(Mean, Sd) UCL	68.71	99% Chebyshev(Mean, Sd) UCL	101.6

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	19.63
Maximum	82.5	Median	6.153
SD	31.24	Std. Error of Mean	12.75
Coefficient of Variation	1.591	Skewness	2.304
Mean of logged Data	2.162	SD of logged Data	1.291

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	45.33	95% Adjusted-CLT UCL (Chen-1995)	53.43
		95% Modified-t UCL (Johnson-1978)	47.33

Nonparametric Distribution Free UCLs

95% CLT UCL	40.61	95% Jackknife UCL	45.33
95% Standard Bootstrap UCL	38.74	95% Bootstrap-t UCL	173.7
95% Hall's Bootstrap UCL	145.4	95% Percentile Bootstrap UCL	43.83
95% BCA Bootstrap UCL	49.5		
90% Chebyshev(Mean, Sd) UCL	57.89	95% Chebyshev(Mean, Sd) UCL	75.22
97.5% Chebyshev(Mean, Sd) UCL	99.27	99% Chebyshev(Mean, Sd) UCL	146.5

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	11.21
Maximum	44.5	Median	3.883
SD	16.43	Std. Error of Mean	6.709
Coefficient of Variation	1.466	Skewness	2.371
Mean of logged Data	1.83	SD of logged Data	1.031

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.73	95% Adjusted-CLT UCL (Chen-1995)	29.18
		95% Modified-t UCL (Johnson-1978)	25.81

Nonparametric Distribution Free UCLs

95% CLT UCL	22.24	95% Jackknife UCL	24.73
95% Standard Bootstrap UCL	21.29	95% Bootstrap-t UCL	270.5
95% Hall's Bootstrap UCL	171.7	95% Percentile Bootstrap UCL	23.9
95% BCA Bootstrap UCL	25.82		
90% Chebyshev(Mean, Sd) UCL	31.34	95% Chebyshev(Mean, Sd) UCL	40.45
97.5% Chebyshev(Mean, Sd) UCL	53.11	99% Chebyshev(Mean, Sd) UCL	77.96

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	7.864
Maximum	31.1	Median	2.625
SD	11.51	Std. Error of Mean	4.701
Coefficient of Variation	1.464	Skewness	2.332
Mean of logged Data	1.453	SD of logged Data	1.067

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.34	95% Adjusted-CLT UCL (Chen-1995)	20.38

		95% Modified-t UCL (Johnson-1978)	18.08

Nonparametric Distribution Free UCLs

95% CLT UCL	15.6	95% Jackknife UCL	17.34
95% Standard Bootstrap UCL	14.78	95% Bootstrap-t UCL	137.2
95% Hall's Bootstrap UCL	171.4	95% Percentile Bootstrap UCL	16.77
95% BCA Bootstrap UCL	18.11		
90% Chebyshev(Mean, Sd) UCL	21.97	95% Chebyshev(Mean, Sd) UCL	28.36
97.5% Chebyshev(Mean, Sd) UCL	37.22	99% Chebyshev(Mean, Sd) UCL	54.64

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	15.77
Maximum	65.8	Median	5.19
SD	24.98	Std. Error of Mean	10.2
Coefficient of Variation	1.584	Skewness	2.255
Mean of logged Data	1.869	SD of logged Data	1.398

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.32	95% Adjusted-CLT UCL (Chen-1995)	42.58
		95% Modified-t UCL (Johnson-1978)	37.88

Nonparametric Distribution Free UCLs

95% CLT UCL	32.54	95% Jackknife UCL	36.32
95% Standard Bootstrap UCL	31	95% Bootstrap-t UCL	108.2
95% Hall's Bootstrap UCL	110.4	95% Percentile Bootstrap UCL	34.98
95% BCA Bootstrap UCL	37.98		
90% Chebyshev(Mean, Sd) UCL	46.37	95% Chebyshev(Mean, Sd) UCL	60.23
97.5% Chebyshev(Mean, Sd) UCL	79.46	99% Chebyshev(Mean, Sd) UCL	117.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.2	Mean	4.195
Maximum	8.88	Median	3.283
SD	2.296	Std. Error of Mean	0.937
Coefficient of Variation	0.547	Skewness	2.447
Mean of logged Data	1.348	SD of logged Data	0.41

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.084	95% Adjusted-CLT UCL (Chen-1995)	6.737
		95% Modified-t UCL (Johnson-1978)	6.24

Nonparametric Distribution Free UCLs

95% CLT UCL	5.737	95% Jackknife UCL	6.084
95% Standard Bootstrap UCL	5.606	95% Bootstrap-t UCL	54.66
95% Hall's Bootstrap UCL	40.01	95% Percentile Bootstrap UCL	6.057
95% BCA Bootstrap UCL	6.094		
90% Chebyshev(Mean, Sd) UCL	7.007	95% Chebyshev(Mean, Sd) UCL	8.28
97.5% Chebyshev(Mean, Sd) UCL	10.05	99% Chebyshev(Mean, Sd) UCL	13.52

Suggested UCL to Use

95% Student's-t UCL	6.084	or 95% Modified-t UCL	6.24

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.01	Mean	25.16
Maximum	119	Median	6.895
SD	46.27	Std. Error of Mean	18.89
Coefficient of Variation	1.839	Skewness	2.38
Mean of logged Data	2.025	SD of logged Data	1.608

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.22	95% Adjusted-CLT UCL (Chen-1995)	75.84
		95% Modified-t UCL (Johnson-1978)	66.28

Nonparametric Distribution Free UCLs

95% CLT UCL	56.23	95% Jackknife UCL	63.22

95% Standard Bootstrap UCL	53.86	95% Bootstrap-t UCL	226.8
95% Hall's Bootstrap UCL	268.5	95% Percentile Bootstrap UCL	62.09
95% BCA Bootstrap UCL	64.13		
90% Chebyshev(Mean, Sd) UCL	81.83	95% Chebyshev(Mean, Sd) UCL	107.5
97.5% Chebyshev(Mean, Sd) UCL	143.1	99% Chebyshev(Mean, Sd) UCL	213.1

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.02	Mean	1.256
Maximum	1.33	Median	1.293
SD	0.117	Std. Error of Mean	0.0479
Coefficient of Variation	0.0934	Skewness	-2.285
Mean of logged Data	0.224	SD of logged Data	0.101

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.352	95% Adjusted-CLT UCL (Chen-1995)	1.287
		95% Modified-t UCL (Johnson-1978)	1.345

Nonparametric Distribution Free UCLs

95% CLT UCL	1.335	95% Jackknife UCL	1.352
95% Standard Bootstrap UCL	1.327	95% Bootstrap-t UCL	1.321
95% Hall's Bootstrap UCL	1.3	95% Percentile Bootstrap UCL	1.312
95% BCA Bootstrap UCL	1.306		
90% Chebyshev(Mean, Sd) UCL	1.4	95% Chebyshev(Mean, Sd) UCL	1.465
97.5% Chebyshev(Mean, Sd) UCL	1.555	99% Chebyshev(Mean, Sd) UCL	1.732

Suggested UCL to Use

95% Student's-t UCL	1.352	or 95% Modified-t UCL	1.345

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	12.7
Maximum	51.3	Median	4.153
SD	19.09	Std. Error of Mean	7.795
Coefficient of Variation	1.503	Skewness	2.35
Mean of logged Data	1.902	SD of logged Data	1.09

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.41	95% Adjusted-CLT UCL (Chen-1995)	33.51
		95% Modified-t UCL (Johnson-1978)	29.65

Nonparametric Distribution Free UCLs

95% CLT UCL	25.52	95% Jackknife UCL	28.41
95% Standard Bootstrap UCL	24.16	95% Bootstrap-t UCL	205.8
95% Hall's Bootstrap UCL	204.4	95% Percentile Bootstrap UCL	27.29
95% BCA Bootstrap UCL	28.99		
90% Chebyshev(Mean, Sd) UCL	36.09	95% Chebyshev(Mean, Sd) UCL	46.68
97.5% Chebyshev(Mean, Sd) UCL	61.38	99% Chebyshev(Mean, Sd) UCL	90.26

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.04	Mean	4.323
Maximum	7.29	Median	4.075
SD	2.102	Std. Error of Mean	0.858
Coefficient of Variation	0.486	Skewness	0.353
Mean of logged Data	1.358	SD of logged Data	0.512

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.053	95% Adjusted-CLT UCL (Chen-1995)	5.867
		95% Modified-t UCL (Johnson-1978)	6.073

Nonparametric Distribution Free UCLs

95% CLT UCL	5.735	95% Jackknife UCL	6.053
95% Standard Bootstrap UCL	5.618	95% Bootstrap-t UCL	6.703
95% Hall's Bootstrap UCL	5.43	95% Percentile Bootstrap UCL	5.638
95% BCA Bootstrap UCL	5.63		
90% Chebyshev(Mean, Sd) UCL	6.898	95% Chebyshev(Mean, Sd) UCL	8.064
97.5% Chebyshev(Mean, Sd) UCL	9.683	99% Chebyshev(Mean, Sd) UCL	12.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	12.83
Maximum	56.6	Median	4.068
SD	21.47	Std. Error of Mean	8.764
Coefficient of Variation	1.673	Skewness	2.437
Mean of logged Data	1.819	SD of logged Data	1.112

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.49	95% Adjusted-CLT UCL (Chen-1995)	36.56
		95% Modified-t UCL (Johnson-1978)	31.94

Nonparametric Distribution Free UCLs

95% CLT UCL	27.24	95% Jackknife UCL	30.49
95% Standard Bootstrap UCL	25.59	95% Bootstrap-t UCL	325.5
95% Hall's Bootstrap UCL	211	95% Percentile Bootstrap UCL	30.21
95% BCA Bootstrap UCL	31.02		
90% Chebyshev(Mean, Sd) UCL	39.12	95% Chebyshev(Mean, Sd) UCL	51.03
97.5% Chebyshev(Mean, Sd) UCL	67.56	99% Chebyshev(Mean, Sd) UCL	100

Suggested UCL to Use

95% Hall's Bootstrap UCL 211

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.25	Mean	21.52
Maximum	97.4	Median	6.57
SD	37.43	Std. Error of Mean	15.28
Coefficient of Variation	1.74	Skewness	2.377
Mean of logged Data	2.101	SD of logged Data	1.397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.3	95% Adjusted-CLT UCL (Chen-1995)	62.49
		95% Modified-t UCL (Johnson-1978)	54.78

Nonparametric Distribution Free UCLs

95% CLT UCL	46.65	95% Jackknife UCL	52.3
95% Standard Bootstrap UCL	44.17	95% Bootstrap-t UCL	193.1
95% Hall's Bootstrap UCL	210.3	95% Percentile Bootstrap UCL	50.33
95% BCA Bootstrap UCL	53.6		
90% Chebyshev(Mean, Sd) UCL	67.35	95% Chebyshev(Mean, Sd) UCL	88.12
97.5% Chebyshev(Mean, Sd) UCL	116.9	99% Chebyshev(Mean, Sd) UCL	173.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:47:55 AM
From File	04589.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.9	Mean	16.62
Maximum	20.4	Median	17.2
SD	3.062	Std. Error of Mean	1.25
Coefficient of Variation	0.184	Skewness	-0.526
Mean of logged Data	2.795	SD of logged Data	0.195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.14	95% Adjusted-CLT UCL (Chen-1995)	18.39
		95% Modified-t UCL (Johnson-1978)	19.09

Nonparametric Distribution Free UCLs

95% CLT UCL	18.67	95% Jackknife UCL	19.14
95% Standard Bootstrap UCL	18.45	95% Bootstrap-t UCL	18.82
95% Hall's Bootstrap UCL	18.33	95% Percentile Bootstrap UCL	18.4
95% BCA Bootstrap UCL	18.4		
90% Chebyshev(Mean, Sd) UCL	20.37	95% Chebyshev(Mean, Sd) UCL	22.07
97.5% Chebyshev(Mean, Sd) UCL	24.42	99% Chebyshev(Mean, Sd) UCL	29.06

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.2	Mean	11
Maximum	12.2	Median	10.8
SD	0.704	Std. Error of Mean	0.288
Coefficient of Variation	0.064	Skewness	1.031

Mean of logged Data	2.396	SD of logged Data	0.0628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.58	95% Adjusted-CLT UCL (Chen-1995)	11.6
		95% Modified-t UCL (Johnson-1978)	11.6

Nonparametric Distribution Free UCLs

95% CLT UCL	11.47	95% Jackknife UCL	11.58
95% Standard Bootstrap UCL	11.42	95% Bootstrap-t UCL	12.1
95% Hall's Bootstrap UCL	15.33	95% Percentile Bootstrap UCL	11.43
95% BCA Bootstrap UCL	11.5		
90% Chebyshev(Mean, Sd) UCL	11.86	95% Chebyshev(Mean, Sd) UCL	12.25
97.5% Chebyshev(Mean, Sd) UCL	12.8	99% Chebyshev(Mean, Sd) UCL	13.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.3	Mean	55.67
Maximum	63.2	Median	59
SD	7.984	Std. Error of Mean	3.26
Coefficient of Variation	0.143	Skewness	-0.924
Mean of logged Data	4.01	SD of logged Data	0.152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.23	95% Adjusted-CLT UCL (Chen-1995)	59.71
		95% Modified-t UCL (Johnson-1978)	62.03

Nonparametric Distribution Free UCLs

95% CLT UCL	61.03	95% Jackknife UCL	62.23
95% Standard Bootstrap UCL	60.59	95% Bootstrap-t UCL	60.76
95% Hall's Bootstrap UCL	59.15	95% Percentile Bootstrap UCL	60.4
95% BCA Bootstrap UCL	59.55		
90% Chebyshev(Mean, Sd) UCL	65.45	95% Chebyshev(Mean, Sd) UCL	69.87
97.5% Chebyshev(Mean, Sd) UCL	76.02	99% Chebyshev(Mean, Sd) UCL	88.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.49	Mean	1.803
Maximum	1.95	Median	1.905
SD	0.198	Std. Error of Mean	0.081
Coefficient of Variation	0.11	Skewness	-1.081
Mean of logged Data	0.584	SD of logged Data	0.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.967	95% Adjusted-CLT UCL (Chen-1995)	1.898
		95% Modified-t UCL (Johnson-1978)	1.961

Nonparametric Distribution Free UCLs

95% CLT UCL	1.937	95% Jackknife UCL	1.967
95% Standard Bootstrap UCL	1.924	95% Bootstrap-t UCL	1.93
95% Hall's Bootstrap UCL	1.883	95% Percentile Bootstrap UCL	1.927
95% BCA Bootstrap UCL	1.892		
90% Chebyshev(Mean, Sd) UCL	2.046	95% Chebyshev(Mean, Sd) UCL	2.156
97.5% Chebyshev(Mean, Sd) UCL	2.309	99% Chebyshev(Mean, Sd) UCL	2.609

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.498	Mean	0.513
Maximum	0.525	Median	0.518

SD	0.0114	Std. Error of Mean	0.00467
Coefficient of Variation	0.0223	Skewness	-0.667
Mean of logged Data	-0.668	SD of logged Data	0.0224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.522	95% Adjusted-CLT UCL (Chen-1995)	0.519
		95% Modified-t UCL (Johnson-1978)	0.522

Nonparametric Distribution Free UCLs

95% CLT UCL	0.521	95% Jackknife UCL	0.522
95% Standard Bootstrap UCL	0.52	95% Bootstrap-t UCL	0.52
95% Hall's Bootstrap UCL	0.518	95% Percentile Bootstrap UCL	0.52
95% BCA Bootstrap UCL	0.518		
90% Chebyshev(Mean, Sd) UCL	0.527	95% Chebyshev(Mean, Sd) UCL	0.533
97.5% Chebyshev(Mean, Sd) UCL	0.542	99% Chebyshev(Mean, Sd) UCL	0.559

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.48	Mean	1.992
Maximum	2.13	Median	2.095
SD	0.253	Std. Error of Mean	0.103
Coefficient of Variation	0.127	Skewness	-2.359
Mean of logged Data	0.681	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.2	95% Adjusted-CLT UCL (Chen-1995)	2.055
		95% Modified-t UCL (Johnson-1978)	2.183

Nonparametric Distribution Free UCLs

95% CLT UCL	2.161	95% Jackknife UCL	2.2
95% Standard Bootstrap UCL	2.147	95% Bootstrap-t UCL	2.135

95% Hall's Bootstrap UCL	2.085	95% Percentile Bootstrap UCL	2.108
95% BCA Bootstrap UCL	2.1		
90% Chebyshev(Mean, Sd) UCL	2.301	95% Chebyshev(Mean, Sd) UCL	2.442
97.5% Chebyshev(Mean, Sd) UCL	2.636	99% Chebyshev(Mean, Sd) UCL	3.019

Suggested UCL to Use

95% Student's-t UCL	2.2	or 95% Modified-t UCL	2.183

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	2.821
Maximum	4.41	Median	2.573
SD	0.934	Std. Error of Mean	0.381
Coefficient of Variation	0.331	Skewness	1.062
Mean of logged Data	0.995	SD of logged Data	0.312

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.589	95% Adjusted-CLT UCL (Chen-1995)	3.625
		95% Modified-t UCL (Johnson-1978)	3.617

Nonparametric Distribution Free UCLs

95% CLT UCL	3.448	95% Jackknife UCL	3.589
95% Standard Bootstrap UCL	3.391	95% Bootstrap-t UCL	4.208
95% Hall's Bootstrap UCL	3.508	95% Percentile Bootstrap UCL	3.435
95% BCA Bootstrap UCL	3.448		
90% Chebyshev(Mean, Sd) UCL	3.965	95% Chebyshev(Mean, Sd) UCL	4.483
97.5% Chebyshev(Mean, Sd) UCL	5.203	99% Chebyshev(Mean, Sd) UCL	6.616

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.44	Mean	1.983
Maximum	2.13	Median	2.095
SD	0.269	Std. Error of Mean	0.11
Coefficient of Variation	0.135	Skewness	-2.342
Mean of logged Data	0.675	SD of logged Data	0.153

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.203	95% Adjusted-CLT UCL (Chen-1995)	2.051
		95% Modified-t UCL (Johnson-1978)	2.186

Nonparametric Distribution Free UCLs

95% CLT UCL	2.163	95% Jackknife UCL	2.203
95% Standard Bootstrap UCL	2.144	95% Bootstrap-t UCL	2.134
95% Hall's Bootstrap UCL	2.083	95% Percentile Bootstrap UCL	2.108
95% BCA Bootstrap UCL	2.101		
90% Chebyshev(Mean, Sd) UCL	2.311	95% Chebyshev(Mean, Sd) UCL	2.46
97.5% Chebyshev(Mean, Sd) UCL	2.667	99% Chebyshev(Mean, Sd) UCL	3.073

Suggested UCL to Use

95% Student's-t UCL	2.203	or 95% Modified-t UCL	2.186

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.97	Mean	5.855
Maximum	9.27	Median	5.348
SD	3.022	Std. Error of Mean	1.234
Coefficient of Variation	0.516	Skewness	0.153
Mean of logged Data	1.645	SD of logged Data	0.55

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	8.341	95% Adjusted-CLT UCL (Chen-1995)	7.966
		95% Modified-t UCL (Johnson-1978)	8.354

Nonparametric Distribution Free UCLs

95% CLT UCL	7.884	95% Jackknife UCL	8.341
95% Standard Bootstrap UCL	7.727	95% Bootstrap-t UCL	8.192
95% Hall's Bootstrap UCL	6.935	95% Percentile Bootstrap UCL	7.808
95% BCA Bootstrap UCL	7.808		
90% Chebyshev(Mean, Sd) UCL	9.556	95% Chebyshev(Mean, Sd) UCL	11.23
97.5% Chebyshev(Mean, Sd) UCL	13.56	99% Chebyshev(Mean, Sd) UCL	18.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.135	Mean	3.529
Maximum	4.14	Median	3.463
SD	0.386	Std. Error of Mean	0.158
Coefficient of Variation	0.109	Skewness	0.7
Mean of logged Data	1.256	SD of logged Data	0.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.847	95% Adjusted-CLT UCL (Chen-1995)	3.836
		95% Modified-t UCL (Johnson-1978)	3.854

Nonparametric Distribution Free UCLs

95% CLT UCL	3.788	95% Jackknife UCL	3.847
95% Standard Bootstrap UCL	3.771	95% Bootstrap-t UCL	3.978
95% Hall's Bootstrap UCL	3.761	95% Percentile Bootstrap UCL	3.763
95% BCA Bootstrap UCL	3.776		
90% Chebyshev(Mean, Sd) UCL	4.002	95% Chebyshev(Mean, Sd) UCL	4.216
97.5% Chebyshev(Mean, Sd) UCL	4.513	99% Chebyshev(Mean, Sd) UCL	5.097

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	2.601
Maximum	3.37	Median	2.423
SD	0.605	Std. Error of Mean	0.247
Coefficient of Variation	0.233	Skewness	0.424
Mean of logged Data	0.934	SD of logged Data	0.23

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.099	95% Adjusted-CLT UCL (Chen-1995)	3.053
		95% Modified-t UCL (Johnson-1978)	3.106

Nonparametric Distribution Free UCLs

95% CLT UCL	3.007	95% Jackknife UCL	3.099
95% Standard Bootstrap UCL	2.977	95% Bootstrap-t UCL	3.149
95% Hall's Bootstrap UCL	2.97	95% Percentile Bootstrap UCL	2.994
95% BCA Bootstrap UCL	3.013		
90% Chebyshev(Mean, Sd) UCL	3.342	95% Chebyshev(Mean, Sd) UCL	3.678
97.5% Chebyshev(Mean, Sd) UCL	4.144	99% Chebyshev(Mean, Sd) UCL	5.059

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.3	Mean	5.425
Maximum	9.16	Median	4.855
SD	3.386	Std. Error of Mean	1.382
Coefficient of Variation	0.624	Skewness	0.155
Mean of logged Data	1.502	SD of logged Data	0.692

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.21	95% Adjusted-CLT UCL (Chen-1995)	7.792
		95% Modified-t UCL (Johnson-1978)	8.225

Nonparametric Distribution Free UCLs

95% CLT UCL	7.699	95% Jackknife UCL	8.21
95% Standard Bootstrap UCL	7.506	95% Bootstrap-t UCL	7.859
95% Hall's Bootstrap UCL	6.62	95% Percentile Bootstrap UCL	7.645
95% BCA Bootstrap UCL	7.648		
90% Chebyshev(Mean, Sd) UCL	9.572	95% Chebyshev(Mean, Sd) UCL	11.45
97.5% Chebyshev(Mean, Sd) UCL	14.06	99% Chebyshev(Mean, Sd) UCL	19.18

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.11	Mean	3.206
Maximum	3.28	Median	3.228
SD	0.0688	Std. Error of Mean	0.0281
Coefficient of Variation	0.0215	Skewness	-0.597
Mean of logged Data	1.165	SD of logged Data	0.0216

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.262	95% Adjusted-CLT UCL (Chen-1995)	3.245
		95% Modified-t UCL (Johnson-1978)	3.261

Nonparametric Distribution Free UCLs

95% CLT UCL	3.252	95% Jackknife UCL	3.262
95% Standard Bootstrap UCL	3.248	95% Bootstrap-t UCL	3.25
95% Hall's Bootstrap UCL	3.238	95% Percentile Bootstrap UCL	3.248
95% BCA Bootstrap UCL	3.24		
90% Chebyshev(Mean, Sd) UCL	3.29	95% Chebyshev(Mean, Sd) UCL	3.328
97.5% Chebyshev(Mean, Sd) UCL	3.381	99% Chebyshev(Mean, Sd) UCL	3.485

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.105	Mean	6.774
Maximum	11.4	Median	6.78
SD	4.996	Std. Error of Mean	2.039
Coefficient of Variation	0.737	Skewness	-2.531E-4
Mean of logged Data	1.611	SD of logged Data	0.896

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.88	95% Adjusted-CLT UCL (Chen-1995)	10.13
		95% Modified-t UCL (Johnson-1978)	10.88

Nonparametric Distribution Free UCLs

95% CLT UCL	10.13	95% Jackknife UCL	10.88
95% Standard Bootstrap UCL	9.818	95% Bootstrap-t UCL	10.85
95% Hall's Bootstrap UCL	8.401	95% Percentile Bootstrap UCL	9.827
95% BCA Bootstrap UCL	9.797		
90% Chebyshev(Mean, Sd) UCL	12.89	95% Chebyshev(Mean, Sd) UCL	15.66
97.5% Chebyshev(Mean, Sd) UCL	19.51	99% Chebyshev(Mean, Sd) UCL	27.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.945	Mean	1.233
Maximum	1.315	Median	1.29
SD	0.143	Std. Error of Mean	0.0583
Coefficient of Variation	0.116	Skewness	-2.339
Mean of logged Data	0.203	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.351	95% Adjusted-CLT UCL (Chen-1995)	1.27
		95% Modified-t UCL (Johnson-1978)	1.341

Nonparametric Distribution Free UCLs

95% CLT UCL	1.329	95% Jackknife UCL	1.351
95% Standard Bootstrap UCL	1.322	95% Bootstrap-t UCL	1.314
95% Hall's Bootstrap UCL	1.288	95% Percentile Bootstrap UCL	1.298
95% BCA Bootstrap UCL	1.295		
90% Chebyshev(Mean, Sd) UCL	1.408	95% Chebyshev(Mean, Sd) UCL	1.487
97.5% Chebyshev(Mean, Sd) UCL	1.597	99% Chebyshev(Mean, Sd) UCL	1.813

Suggested UCL to Use

95% Student's-t UCL	1.351	or 95% Modified-t UCL	1.341

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.135	Mean	3.606
Maximum	4.33	Median	3.473
SD	0.479	Std. Error of Mean	0.195
Coefficient of Variation	0.133	Skewness	0.651
Mean of logged Data	1.275	SD of logged Data	0.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4	95% Adjusted-CLT UCL (Chen-1995)	3.983
		95% Modified-t UCL (Johnson-1978)	4.008

Nonparametric Distribution Free UCLs

95% CLT UCL	3.927	95% Jackknife UCL	4
95% Standard Bootstrap UCL	3.902	95% Bootstrap-t UCL	4.347
95% Hall's Bootstrap UCL	3.855	95% Percentile Bootstrap UCL	3.908
95% BCA Bootstrap UCL	3.938		
90% Chebyshev(Mean, Sd) UCL	4.192	95% Chebyshev(Mean, Sd) UCL	4.458
97.5% Chebyshev(Mean, Sd) UCL	4.827	99% Chebyshev(Mean, Sd) UCL	5.551

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.84	Mean	2.817
Maximum	4.13	Median	2.595
SD	0.899	Std. Error of Mean	0.367
Coefficient of Variation	0.319	Skewness	0.548
Mean of logged Data	0.994	SD of logged Data	0.316

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.556	95% Adjusted-CLT UCL (Chen-1995)	3.508
		95% Modified-t UCL (Johnson-1978)	3.57

Nonparametric Distribution Free UCLs

95% CLT UCL	3.421	95% Jackknife UCL	3.556
95% Standard Bootstrap UCL	3.357	95% Bootstrap-t UCL	3.73
95% Hall's Bootstrap UCL	3.565	95% Percentile Bootstrap UCL	3.368
95% BCA Bootstrap UCL	3.438		
90% Chebyshev(Mean, Sd) UCL	3.918	95% Chebyshev(Mean, Sd) UCL	4.417
97.5% Chebyshev(Mean, Sd) UCL	5.11	99% Chebyshev(Mean, Sd) UCL	6.47

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.135	Mean	4.463
Maximum	6.01	Median	4.238
SD	1.398	Std. Error of Mean	0.571
Coefficient of Variation	0.313	Skewness	0.139
Mean of logged Data	1.454	SD of logged Data	0.319

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.612	95% Adjusted-CLT UCL (Chen-1995)	5.436

		95% Modified-t UCL (Johnson-1978)	5.618

Nonparametric Distribution Free UCLs

95% CLT UCL	5.401	95% Jackknife UCL	5.612
95% Standard Bootstrap UCL	5.3	95% Bootstrap-t UCL	6
95% Hall's Bootstrap UCL	4.958	95% Percentile Bootstrap UCL	5.366
95% BCA Bootstrap UCL	5.349		
90% Chebyshev(Mean, Sd) UCL	6.174	95% Chebyshev(Mean, Sd) UCL	6.95
97.5% Chebyshev(Mean, Sd) UCL	8.026	99% Chebyshev(Mean, Sd) UCL	10.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.25	Mean	5.837
Maximum	9.05	Median	5.843
SD	3.267	Std. Error of Mean	1.334
Coefficient of Variation	0.56	Skewness	-0.0318
Mean of logged Data	1.609	SD of logged Data	0.633

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.524	95% Adjusted-CLT UCL (Chen-1995)	8.012
		95% Modified-t UCL (Johnson-1978)	8.521

Nonparametric Distribution Free UCLs

95% CLT UCL	8.03	95% Jackknife UCL	8.524
95% Standard Bootstrap UCL	7.764	95% Bootstrap-t UCL	8.536
95% Hall's Bootstrap UCL	6.977	95% Percentile Bootstrap UCL	7.906
95% BCA Bootstrap UCL	7.842		
90% Chebyshev(Mean, Sd) UCL	9.838	95% Chebyshev(Mean, Sd) UCL	11.65
97.5% Chebyshev(Mean, Sd) UCL	14.17	99% Chebyshev(Mean, Sd) UCL	19.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:49:10 AM
From File	04663A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	13.1	Mean	15.52
Maximum	22	Median	14.25
SD	3.398	Std. Error of Mean	1.387
Coefficient of Variation	0.219	Skewness	1.84
Mean of logged Data	2.724	SD of logged Data	0.198

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.31	95% Adjusted-CLT UCL (Chen-1995)	18.91
		95% Modified-t UCL (Johnson-1978)	18.49

Nonparametric Distribution Free UCLs

95% CLT UCL	17.8	95% Jackknife UCL	18.31
95% Standard Bootstrap UCL	17.59	95% Bootstrap-t UCL	25.7
95% Hall's Bootstrap UCL	29.82	95% Percentile Bootstrap UCL	17.77
95% BCA Bootstrap UCL	18.43		
90% Chebyshev(Mean, Sd) UCL	19.68	95% Chebyshev(Mean, Sd) UCL	21.56
97.5% Chebyshev(Mean, Sd) UCL	24.18	99% Chebyshev(Mean, Sd) UCL	29.32

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23	Mean	49.37
Maximum	112	Median	29.5
SD	36.03	Std. Error of Mean	14.71
Coefficient of Variation	0.73	Skewness	1.394
Mean of logged Data	3.71	SD of logged Data	0.642

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	79	95% Adjusted-CLT UCL (Chen-1995)	82.5
		95% Modified-t UCL (Johnson-1978)	80.4

Nonparametric Distribution Free UCLs

95% CLT UCL	73.56	95% Jackknife UCL	79
95% Standard Bootstrap UCL	70.97	95% Bootstrap-t UCL	340.1
95% Hall's Bootstrap UCL	391.1	95% Percentile Bootstrap UCL	71.65
95% BCA Bootstrap UCL	76.87		
90% Chebyshev(Mean, Sd) UCL	93.49	95% Chebyshev(Mean, Sd) UCL	113.5
97.5% Chebyshev(Mean, Sd) UCL	141.2	99% Chebyshev(Mean, Sd) UCL	195.7

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	49.9	Mean	64.78
Maximum	78.4	Median	66.25
SD	13.01	Std. Error of Mean	5.31
Coefficient of Variation	0.201	Skewness	-0.136
Mean of logged Data	4.154	SD of logged Data	0.206

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	75.48	95% Adjusted-CLT UCL (Chen-1995)	73.2
		95% Modified-t UCL (Johnson-1978)	75.43

Nonparametric Distribution Free UCLs

95% CLT UCL	73.52	95% Jackknife UCL	75.48
95% Standard Bootstrap UCL	72.79	95% Bootstrap-t UCL	75.48
95% Hall's Bootstrap UCL	69.99	95% Percentile Bootstrap UCL	72.65
95% BCA Bootstrap UCL	72.65		
90% Chebyshev(Mean, Sd) UCL	80.71	95% Chebyshev(Mean, Sd) UCL	87.93
97.5% Chebyshev(Mean, Sd) UCL	97.94	99% Chebyshev(Mean, Sd) UCL	117.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.917	Mean	2.824
Maximum	11	Median	1.045
SD	4.024	Std. Error of Mean	1.643
Coefficient of Variation	1.425	Skewness	2.401
Mean of logged Data	0.509	SD of logged Data	0.965

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.134	95% Adjusted-CLT UCL (Chen-1995)	7.247
		95% Modified-t UCL (Johnson-1978)	6.402

Nonparametric Distribution Free UCLs

95% CLT UCL	5.526	95% Jackknife UCL	6.134
95% Standard Bootstrap UCL	5.271	95% Bootstrap-t UCL	134.1
95% Hall's Bootstrap UCL	56.47	95% Percentile Bootstrap UCL	5.995
95% BCA Bootstrap UCL	7.639		
90% Chebyshev(Mean, Sd) UCL	7.752	95% Chebyshev(Mean, Sd) UCL	9.984
97.5% Chebyshev(Mean, Sd) UCL	13.08	99% Chebyshev(Mean, Sd) UCL	19.17

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.984

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.489	Mean	10.12
Maximum	51.5	Median	2.11
SD	20.28	Std. Error of Mean	8.28
Coefficient of Variation	2.003	Skewness	2.442
Mean of logged Data	1.054	SD of logged Data	1.54

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.81	95% Adjusted-CLT UCL (Chen-1995)	32.57
		95% Modified-t UCL (Johnson-1978)	28.19

Nonparametric Distribution Free UCLs

95% CLT UCL	23.75	95% Jackknife UCL	26.81
95% Standard Bootstrap UCL	22.84	95% Bootstrap-t UCL	521.8
95% Hall's Bootstrap UCL	300.6	95% Percentile Bootstrap UCL	26.46
95% BCA Bootstrap UCL	26.89		
90% Chebyshev(Mean, Sd) UCL	34.97	95% Chebyshev(Mean, Sd) UCL	46.22
97.5% Chebyshev(Mean, Sd) UCL	61.84	99% Chebyshev(Mean, Sd) UCL	92.51

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.36	Mean	18.6
Maximum	88.3	Median	5.565
SD	34.18	Std. Error of Mean	13.95
Coefficient of Variation	1.838	Skewness	2.438
Mean of logged Data	1.973	SD of logged Data	1.287

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.72	95% Adjusted-CLT UCL (Chen-1995)	56.39
		95% Modified-t UCL (Johnson-1978)	49.04

Nonparametric Distribution Free UCLs

95% CLT UCL	41.56	95% Jackknife UCL	46.72
95% Standard Bootstrap UCL	39.66	95% Bootstrap-t UCL	403.2
95% Hall's Bootstrap UCL	335	95% Percentile Bootstrap UCL	46.14
95% BCA Bootstrap UCL	47.08		
90% Chebyshev(Mean, Sd) UCL	60.47	95% Chebyshev(Mean, Sd) UCL	79.43
97.5% Chebyshev(Mean, Sd) UCL	105.7	99% Chebyshev(Mean, Sd) UCL	157.4

Suggested UCL to Use

95% Hall's Bootstrap UCL	335

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.5	Mean	137.9
Maximum	628	Median	45.8
SD	240.5	Std. Error of Mean	98.17
Coefficient of Variation	1.744	Skewness	2.433
Mean of logged Data	4.086	SD of logged Data	1.223

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	335.7	95% Adjusted-CLT UCL (Chen-1995)	403.6
		95% Modified-t UCL (Johnson-1978)	351.9

Nonparametric Distribution Free UCLs

95% CLT UCL	299.4	95% Jackknife UCL	335.7
95% Standard Bootstrap UCL	282.6	95% Bootstrap-t UCL	3002
95% Hall's Bootstrap UCL	2240	95% Percentile Bootstrap UCL	327.7
95% BCA Bootstrap UCL	337.7		
90% Chebyshev(Mean, Sd) UCL	432.4	95% Chebyshev(Mean, Sd) UCL	565.8
97.5% Chebyshev(Mean, Sd) UCL	750.9	99% Chebyshev(Mean, Sd) UCL	1115

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.8	Mean	180.5
Maximum	810	Median	61.1
SD	309	Std. Error of Mean	126.2
Coefficient of Variation	1.712	Skewness	2.426
Mean of logged Data	4.376	SD of logged Data	1.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	434.8	95% Adjusted-CLT UCL (Chen-1995)	521.6
		95% Modified-t UCL (Johnson-1978)	455.6

Nonparametric Distribution Free UCLs

95% CLT UCL	388	95% Jackknife UCL	434.8
95% Standard Bootstrap UCL	373.3	95% Bootstrap-t UCL	3040
95% Hall's Bootstrap UCL	2247	95% Percentile Bootstrap UCL	429
95% BCA Bootstrap UCL	436.8		
90% Chebyshev(Mean, Sd) UCL	559	95% Chebyshev(Mean, Sd) UCL	730.5
97.5% Chebyshev(Mean, Sd) UCL	968.4	99% Chebyshev(Mean, Sd) UCL	1436

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	27	Mean	181.5
Maximum	788	Median	66.35
SD	297.8	Std. Error of Mean	121.6
Coefficient of Variation	1.641	Skewness	2.425
Mean of logged Data	4.467	SD of logged Data	1.15

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	426.5	95% Adjusted-CLT UCL (Chen-1995)	510
		95% Modified-t UCL (Johnson-1978)	446.5

Nonparametric Distribution Free UCLs

95% CLT UCL	381.4	95% Jackknife UCL	426.5
95% Standard Bootstrap UCL	361.6	95% Bootstrap-t UCL	2912
95% Hall's Bootstrap UCL	2288	95% Percentile Bootstrap UCL	417.2
95% BCA Bootstrap UCL	430.3		
90% Chebyshev(Mean, Sd) UCL	546.2	95% Chebyshev(Mean, Sd) UCL	711.4
97.5% Chebyshev(Mean, Sd) UCL	940.7	99% Chebyshev(Mean, Sd) UCL	1391

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.3	Mean	78.65
Maximum	317	Median	34.65
SD	117.3	Std. Error of Mean	47.87
Coefficient of Variation	1.491	Skewness	2.404
Mean of logged Data	3.761	SD of logged Data	1.057

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	175.1	95% Adjusted-CLT UCL (Chen-1995)	207.6
		95% Modified-t UCL (Johnson-1978)	182.9

Nonparametric Distribution Free UCLs

95% CLT UCL	157.4	95% Jackknife UCL	175.1
95% Standard Bootstrap UCL	150.2	95% Bootstrap-t UCL	776.1
95% Hall's Bootstrap UCL	729.9	95% Percentile Bootstrap UCL	172.3
95% BCA Bootstrap UCL	177.3		
90% Chebyshev(Mean, Sd) UCL	222.3	95% Chebyshev(Mean, Sd) UCL	287.3
97.5% Chebyshev(Mean, Sd) UCL	377.6	99% Chebyshev(Mean, Sd) UCL	554.9

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.67	Mean	68.36
Maximum	288	Median	28.4
SD	108.1	Std. Error of Mean	44.13
Coefficient of Variation	1.581	Skewness	2.399
Mean of logged Data	3.51	SD of logged Data	1.177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	157.3	95% Adjusted-CLT UCL (Chen-1995)	187.1
		95% Modified-t UCL (Johnson-1978)	164.5

Nonparametric Distribution Free UCLs

95% CLT UCL	140.9	95% Jackknife UCL	157.3
95% Standard Bootstrap UCL	133.6	95% Bootstrap-t UCL	705.7
95% Hall's Bootstrap UCL	641.2	95% Percentile Bootstrap UCL	154.9
95% BCA Bootstrap UCL	160.8		
90% Chebyshev(Mean, Sd) UCL	200.8	95% Chebyshev(Mean, Sd) UCL	260.7
97.5% Chebyshev(Mean, Sd) UCL	344	99% Chebyshev(Mean, Sd) UCL	507.4

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18	Mean	160
Maximum	728	Median	51.65
SD	278.8	Std. Error of Mean	113.8
Coefficient of Variation	1.742	Skewness	2.429
Mean of logged Data	4.221	SD of logged Data	1.249

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	389.3	95% Adjusted-CLT UCL (Chen-1995)	467.8
		95% Modified-t UCL (Johnson-1978)	408.1

Nonparametric Distribution Free UCLs

95% CLT UCL	347.2	95% Jackknife UCL	389.3
95% Standard Bootstrap UCL	333.1	95% Bootstrap-t UCL	2882
95% Hall's Bootstrap UCL	2207	95% Percentile Bootstrap UCL	384.2
95% BCA Bootstrap UCL	393.8		
90% Chebyshev(Mean, Sd) UCL	501.4	95% Chebyshev(Mean, Sd) UCL	656.1
97.5% Chebyshev(Mean, Sd) UCL	870.8	99% Chebyshev(Mean, Sd) UCL	1292

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.7	Mean	25.62
Maximum	110	Median	9.515
SD	41.46	Std. Error of Mean	16.93
Coefficient of Variation	1.619	Skewness	2.417
Mean of logged Data	2.521	SD of logged Data	1.152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.72	95% Adjusted-CLT UCL (Chen-1995)	71.3
		95% Modified-t UCL (Johnson-1978)	62.51

Nonparametric Distribution Free UCLs

95% CLT UCL	53.46	95% Jackknife UCL	59.72
95% Standard Bootstrap UCL	51.1	95% Bootstrap-t UCL	338.6
95% Hall's Bootstrap UCL	284.3	95% Percentile Bootstrap UCL	58.74
95% BCA Bootstrap UCL	60.72		
90% Chebyshev(Mean, Sd) UCL	76.39	95% Chebyshev(Mean, Sd) UCL	99.4
97.5% Chebyshev(Mean, Sd) UCL	131.3	99% Chebyshev(Mean, Sd) UCL	194

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23	Mean	191.7
Maximum	882	Median	60.25
SD	338.7	Std. Error of Mean	138.3
Coefficient of Variation	1.766	Skewness	2.433
Mean of logged Data	4.386	SD of logged Data	1.246

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	470.3	95% Adjusted-CLT UCL (Chen-1995)	565.9

		95% Modified-t UCL (Johnson-1978)	493.2

Nonparametric Distribution Free UCLs

95% CLT UCL	419.1	95% Jackknife UCL	470.3
95% Standard Bootstrap UCL	402.2	95% Bootstrap-t UCL	4120
95% Hall's Bootstrap UCL	2752	95% Percentile Bootstrap UCL	466
95% BCA Bootstrap UCL	473.9		
90% Chebyshev(Mean, Sd) UCL	606.5	95% Chebyshev(Mean, Sd) UCL	794.4
97.5% Chebyshev(Mean, Sd) UCL	1055	99% Chebyshev(Mean, Sd) UCL	1567

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.21	Mean	3.916
Maximum	17.1	Median	1.308
SD	6.459	Std. Error of Mean	2.637
Coefficient of Variation	1.649	Skewness	2.449
Mean of logged Data	0.678	SD of logged Data	1.059

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.229	95% Adjusted-CLT UCL (Chen-1995)	11.07
		95% Modified-t UCL (Johnson-1978)	9.669

Nonparametric Distribution Free UCLs

95% CLT UCL	8.253	95% Jackknife UCL	9.229
95% Standard Bootstrap UCL	7.923	95% Bootstrap-t UCL	551.8
95% Hall's Bootstrap UCL	421.6	95% Percentile Bootstrap UCL	9.18
95% BCA Bootstrap UCL	9.198		
90% Chebyshev(Mean, Sd) UCL	11.83	95% Chebyshev(Mean, Sd) UCL	15.41
97.5% Chebyshev(Mean, Sd) UCL	20.38	99% Chebyshev(Mean, Sd) UCL	30.15

Suggested UCL to Use

95% Hall's Bootstrap UCL 421.6

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.4	Mean	109.8
Maximum	457	Median	43.75
SD	170.6	Std. Error of Mean	69.66
Coefficient of Variation	1.554	Skewness	2.415
Mean of logged Data	4.047	SD of logged Data	1.087

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	250.2	95% Adjusted-CLT UCL (Chen-1995)	297.8
		95% Modified-t UCL (Johnson-1978)	261.6

Nonparametric Distribution Free UCLs

95% CLT UCL	224.4	95% Jackknife UCL	250.2
95% Standard Bootstrap UCL	214.3	95% Bootstrap-t UCL	1373
95% Hall's Bootstrap UCL	1073	95% Percentile Bootstrap UCL	246.2
95% BCA Bootstrap UCL	254.2		
90% Chebyshev(Mean, Sd) UCL	318.8	95% Chebyshev(Mean, Sd) UCL	413.4
97.5% Chebyshev(Mean, Sd) UCL	544.8	99% Chebyshev(Mean, Sd) UCL	802.9

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.975	Mean	5.323
Maximum	22.5	Median	2.075
SD	8.428	Std. Error of Mean	3.441
Coefficient of Variation	1.584	Skewness	2.432
Mean of logged Data	1.013	SD of logged Data	1.076

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.26	95% Adjusted-CLT UCL (Chen-1995)	14.63

		95% Modified-t UCL (Johnson-1978)	12.83

Nonparametric Distribution Free UCLs

95% CLT UCL	10.98	95% Jackknife UCL	12.26
95% Standard Bootstrap UCL	10.47	95% Bootstrap-t UCL	198
95% Hall's Bootstrap UCL	91.64	95% Percentile Bootstrap UCL	12.1
95% BCA Bootstrap UCL	12.35		
90% Chebyshev(Mean, Sd) UCL	15.65	95% Chebyshev(Mean, Sd) UCL	20.32
97.5% Chebyshev(Mean, Sd) UCL	26.81	99% Chebyshev(Mean, Sd) UCL	39.56

Suggested UCL to Use

95% Hall's Bootstrap UCL	91.64

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.6	Mean	86.65
Maximum	408	Median	26.75
SD	157.6	Std. Error of Mean	64.34
Coefficient of Variation	1.819	Skewness	2.438
Mean of logged Data	3.537	SD of logged Data	1.272

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	216.3	95% Adjusted-CLT UCL (Chen-1995)	260.9
		95% Modified-t UCL (Johnson-1978)	227

Nonparametric Distribution Free UCLs

95% CLT UCL	192.5	95% Jackknife UCL	216.3
95% Standard Bootstrap UCL	183.4	95% Bootstrap-t UCL	2137
95% Hall's Bootstrap UCL	1775	95% Percentile Bootstrap UCL	212.6
95% BCA Bootstrap UCL	217.9		
90% Chebyshev(Mean, Sd) UCL	279.7	95% Chebyshev(Mean, Sd) UCL	367.1
97.5% Chebyshev(Mean, Sd) UCL	488.4	99% Chebyshev(Mean, Sd) UCL	726.8

Suggested UCL to Use

95% Hall's Bootstrap UCL	1775

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	22.1	Mean	221.7
Maximum	1050	Median	61.7
SD	406.3	Std. Error of Mean	165.9
Coefficient of Variation	1.833	Skewness	2.436
Mean of logged Data	4.441	SD of logged Data	1.314

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	555.9	95% Adjusted-CLT UCL (Chen-1995)	670.7
		95% Modified-t UCL (Johnson-1978)	583.4

Nonparametric Distribution Free UCLs

95% CLT UCL	494.5	95% Jackknife UCL	555.9
95% Standard Bootstrap UCL	468.7	95% Bootstrap-t UCL	5347
95% Hall's Bootstrap UCL	3903	95% Percentile Bootstrap UCL	549.3
95% BCA Bootstrap UCL	559.3		
90% Chebyshev(Mean, Sd) UCL	719.3	95% Chebyshev(Mean, Sd) UCL	944.7
97.5% Chebyshev(Mean, Sd) UCL	1258	99% Chebyshev(Mean, Sd) UCL	1872

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:50:22 AM
From File	04668.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.6	Mean	16.54
Maximum	24	Median	16.25
SD	4.703	Std. Error of Mean	1.92
Coefficient of Variation	0.284	Skewness	0.626
Mean of logged Data	2.773	SD of logged Data	0.281

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.41	95% Adjusted-CLT UCL (Chen-1995)	20.22
		95% Modified-t UCL (Johnson-1978)	20.49

Nonparametric Distribution Free UCLs

95% CLT UCL	19.7	95% Jackknife UCL	20.41
95% Standard Bootstrap UCL	19.43	95% Bootstrap-t UCL	21.27
95% Hall's Bootstrap UCL	20.63	95% Percentile Bootstrap UCL	19.6
95% BCA Bootstrap UCL	19.78		
90% Chebyshev(Mean, Sd) UCL	22.3	95% Chebyshev(Mean, Sd) UCL	24.91
97.5% Chebyshev(Mean, Sd) UCL	28.53	99% Chebyshev(Mean, Sd) UCL	35.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.4	Mean	20.38
Maximum	33.8	Median	18.9
SD	7.547	Std. Error of Mean	3.081
Coefficient of Variation	0.37	Skewness	1.271
Mean of logged Data	2.963	SD of logged Data	0.345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.59	95% Adjusted-CLT UCL (Chen-1995)	27.16
		95% Modified-t UCL (Johnson-1978)	26.86

Nonparametric Distribution Free UCLs

95% CLT UCL	25.45	95% Jackknife UCL	26.59
95% Standard Bootstrap UCL	25.03	95% Bootstrap-t UCL	30.58
95% Hall's Bootstrap UCL	54.22	95% Percentile Bootstrap UCL	25.43
95% BCA Bootstrap UCL	26.27		
90% Chebyshev(Mean, Sd) UCL	29.63	95% Chebyshev(Mean, Sd) UCL	33.81
97.5% Chebyshev(Mean, Sd) UCL	39.63	99% Chebyshev(Mean, Sd) UCL	51.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	56.9	Mean	72.55
Maximum	91.8	Median	70.75
SD	16.16	Std. Error of Mean	6.597
Coefficient of Variation	0.223	Skewness	0.138
Mean of logged Data	4.263	SD of logged Data	0.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	85.84	95% Adjusted-CLT UCL (Chen-1995)	83.8
		95% Modified-t UCL (Johnson-1978)	85.91

Nonparametric Distribution Free UCLs

95% CLT UCL	83.4	95% Jackknife UCL	85.84
95% Standard Bootstrap UCL	82.26	95% Bootstrap-t UCL	85.81
95% Hall's Bootstrap UCL	78.5	95% Percentile Bootstrap UCL	82.83
95% BCA Bootstrap UCL	82.23		
90% Chebyshev(Mean, Sd) UCL	92.34	95% Chebyshev(Mean, Sd) UCL	101.3
97.5% Chebyshev(Mean, Sd) UCL	113.8	99% Chebyshev(Mean, Sd) UCL	138.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.2	Mean	2.573
Maximum	5.73	Median	2.145
SD	1.693	Std. Error of Mean	0.691
Coefficient of Variation	0.658	Skewness	1.621
Mean of logged Data	0.791	SD of logged Data	0.59

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.966	95% Adjusted-CLT UCL (Chen-1995)	4.198
		95% Modified-t UCL (Johnson-1978)	4.042

Nonparametric Distribution Free UCLs

95% CLT UCL	3.71	95% Jackknife UCL	3.966
95% Standard Bootstrap UCL	3.608	95% Bootstrap-t UCL	5.082
95% Hall's Bootstrap UCL	8.648	95% Percentile Bootstrap UCL	3.675
95% BCA Bootstrap UCL	3.99		
90% Chebyshev(Mean, Sd) UCL	4.646	95% Chebyshev(Mean, Sd) UCL	5.585
97.5% Chebyshev(Mean, Sd) UCL	6.889	99% Chebyshev(Mean, Sd) UCL	9.449

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.353	Mean	0.488
Maximum	0.71	Median	0.486
SD	0.131	Std. Error of Mean	0.0533
Coefficient of Variation	0.268	Skewness	0.896
Mean of logged Data	-0.746	SD of logged Data	0.259

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.595	95% Adjusted-CLT UCL (Chen-1995)	0.596
		95% Modified-t UCL (Johnson-1978)	0.598

Nonparametric Distribution Free UCLs

95% CLT UCL	0.575	95% Jackknife UCL	0.595
95% Standard Bootstrap UCL	0.567	95% Bootstrap-t UCL	0.618
95% Hall's Bootstrap UCL	0.643	95% Percentile Bootstrap UCL	0.575
95% BCA Bootstrap UCL	0.583		
90% Chebyshev(Mean, Sd) UCL	0.648	95% Chebyshev(Mean, Sd) UCL	0.72
97.5% Chebyshev(Mean, Sd) UCL	0.821	99% Chebyshev(Mean, Sd) UCL	1.018

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.47	Mean	1.967
Maximum	2.15	Median	2.063
SD	0.257	Std. Error of Mean	0.105
Coefficient of Variation	0.131	Skewness	-1.927
Mean of logged Data	0.668	SD of logged Data	0.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.178	95% Adjusted-CLT UCL (Chen-1995)	2.051
		95% Modified-t UCL (Johnson-1978)	2.164

Nonparametric Distribution Free UCLs

95% CLT UCL	2.139	95% Jackknife UCL	2.178
95% Standard Bootstrap UCL	2.127	95% Bootstrap-t UCL	2.106
95% Hall's Bootstrap UCL	2.075	95% Percentile Bootstrap UCL	2.103
95% BCA Bootstrap UCL	2.081		
90% Chebyshev(Mean, Sd) UCL	2.282	95% Chebyshev(Mean, Sd) UCL	2.424
97.5% Chebyshev(Mean, Sd) UCL	2.622	99% Chebyshev(Mean, Sd) UCL	3.011

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.97	Mean	6.345
Maximum	10.4	Median	6.775
SD	3.814	Std. Error of Mean	1.557
Coefficient of Variation	0.601	Skewness	-0.186
Mean of logged Data	1.641	SD of logged Data	0.758

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.482	95% Adjusted-CLT UCL (Chen-1995)	8.78
		95% Modified-t UCL (Johnson-1978)	9.463

Nonparametric Distribution Free UCLs

95% CLT UCL	8.906	95% Jackknife UCL	9.482
95% Standard Bootstrap UCL	8.716	95% Bootstrap-t UCL	9.267
95% Hall's Bootstrap UCL	8.053	95% Percentile Bootstrap UCL	8.672
95% BCA Bootstrap UCL	8.738		
90% Chebyshev(Mean, Sd) UCL	11.02	95% Chebyshev(Mean, Sd) UCL	13.13
97.5% Chebyshev(Mean, Sd) UCL	16.07	99% Chebyshev(Mean, Sd) UCL	21.84

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.15	Mean	7.19
Maximum	14.8	Median	4.7
SD	5.691	Std. Error of Mean	2.323
Coefficient of Variation	0.791	Skewness	0.749
Mean of logged Data	1.693	SD of logged Data	0.826

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.87	95% Adjusted-CLT UCL (Chen-1995)	11.77
		95% Modified-t UCL (Johnson-1978)	11.99

Nonparametric Distribution Free UCLs

95% CLT UCL	11.01	95% Jackknife UCL	11.87
95% Standard Bootstrap UCL	10.7	95% Bootstrap-t UCL	17.34
95% Hall's Bootstrap UCL	16.69	95% Percentile Bootstrap UCL	10.91
95% BCA Bootstrap UCL	11.08		
90% Chebyshev(Mean, Sd) UCL	14.16	95% Chebyshev(Mean, Sd) UCL	17.32
97.5% Chebyshev(Mean, Sd) UCL	21.7	99% Chebyshev(Mean, Sd) UCL	30.31

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.94	Mean	11.15
Maximum	17.8	Median	11.45
SD	6.485	Std. Error of Mean	2.648
Coefficient of Variation	0.581	Skewness	-0.069
Mean of logged Data	2.234	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.49	95% Adjusted-CLT UCL (Chen-1995)	15.43
		95% Modified-t UCL (Johnson-1978)	16.48

Nonparametric Distribution Free UCLs

95% CLT UCL	15.51	95% Jackknife UCL	16.49
95% Standard Bootstrap UCL	15.08	95% Bootstrap-t UCL	16.58
95% Hall's Bootstrap UCL	14.05	95% Percentile Bootstrap UCL	15.11
95% BCA Bootstrap UCL	15.02		
90% Chebyshev(Mean, Sd) UCL	19.1	95% Chebyshev(Mean, Sd) UCL	22.69
97.5% Chebyshev(Mean, Sd) UCL	27.69	99% Chebyshev(Mean, Sd) UCL	37.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.37	Mean	6.837
Maximum	10.8	Median	7.43
SD	3.886	Std. Error of Mean	1.586
Coefficient of Variation	0.568	Skewness	-0.219
Mean of logged Data	1.745	SD of logged Data	0.696

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.03	95% Adjusted-CLT UCL (Chen-1995)	9.295
		95% Modified-t UCL (Johnson-1978)	10.01

Nonparametric Distribution Free UCLs

95% CLT UCL	9.446	95% Jackknife UCL	10.03
95% Standard Bootstrap UCL	9.237	95% Bootstrap-t UCL	9.923
95% Hall's Bootstrap UCL	8.492	95% Percentile Bootstrap UCL	9.17
95% BCA Bootstrap UCL	9.195		
90% Chebyshev(Mean, Sd) UCL	11.6	95% Chebyshev(Mean, Sd) UCL	13.75
97.5% Chebyshev(Mean, Sd) UCL	16.74	99% Chebyshev(Mean, Sd) UCL	22.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.925	Mean	4.456
Maximum	7.19	Median	4.535
SD	2.301	Std. Error of Mean	0.94
Coefficient of Variation	0.517	Skewness	-0.0182
Mean of logged Data	1.362	SD of logged Data	0.586

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.349	95% Adjusted-CLT UCL (Chen-1995)	5.994
		95% Modified-t UCL (Johnson-1978)	6.348

Nonparametric Distribution Free UCLs

95% CLT UCL	6.001	95% Jackknife UCL	6.349
95% Standard Bootstrap UCL	5.858	95% Bootstrap-t UCL	6.408
95% Hall's Bootstrap UCL	5.578	95% Percentile Bootstrap UCL	5.933
95% BCA Bootstrap UCL	5.831		
90% Chebyshev(Mean, Sd) UCL	7.275	95% Chebyshev(Mean, Sd) UCL	8.551
97.5% Chebyshev(Mean, Sd) UCL	10.32	99% Chebyshev(Mean, Sd) UCL	13.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.5	Mean	10.17
Maximum	16.5	Median	10.8
SD	5.961	Std. Error of Mean	2.434
Coefficient of Variation	0.586	Skewness	-0.156
Mean of logged Data	2.131	SD of logged Data	0.717

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.08	95% Adjusted-CLT UCL (Chen-1995)	14.01
		95% Modified-t UCL (Johnson-1978)	15.05

Nonparametric Distribution Free UCLs

95% CLT UCL	14.18	95% Jackknife UCL	15.08
95% Standard Bootstrap UCL	13.89	95% Bootstrap-t UCL	15.19
95% Hall's Bootstrap UCL	12.87	95% Percentile Bootstrap UCL	13.79
95% BCA Bootstrap UCL	14.01		
90% Chebyshev(Mean, Sd) UCL	17.47	95% Chebyshev(Mean, Sd) UCL	20.78
97.5% Chebyshev(Mean, Sd) UCL	25.37	99% Chebyshev(Mean, Sd) UCL	34.39

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.53	Mean	3.072
Maximum	3.305	Median	3.178
SD	0.295	Std. Error of Mean	0.12
Coefficient of Variation	0.0961	Skewness	-1.557
Mean of logged Data	1.118	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.314	95% Adjusted-CLT UCL (Chen-1995)	3.188
		95% Modified-t UCL (Johnson-1978)	3.302

Nonparametric Distribution Free UCLs

95% CLT UCL	3.27	95% Jackknife UCL	3.314
95% Standard Bootstrap UCL	3.25	95% Bootstrap-t UCL	3.249
95% Hall's Bootstrap UCL	3.2	95% Percentile Bootstrap UCL	3.233
95% BCA Bootstrap UCL	3.211		
90% Chebyshev(Mean, Sd) UCL	3.433	95% Chebyshev(Mean, Sd) UCL	3.597
97.5% Chebyshev(Mean, Sd) UCL	3.824	99% Chebyshev(Mean, Sd) UCL	4.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.41	Mean	10.61
Maximum	18	Median	11.02

SD	6.633	Std. Error of Mean	2.708
Coefficient of Variation	0.625	Skewness	-0.0635
Mean of logged Data	2.148	SD of logged Data	0.762

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.07	95% Adjusted-CLT UCL (Chen-1995)	14.99
		95% Modified-t UCL (Johnson-1978)	16.06

Nonparametric Distribution Free UCLs

95% CLT UCL	15.07	95% Jackknife UCL	16.07
95% Standard Bootstrap UCL	14.6	95% Bootstrap-t UCL	16.04
95% Hall's Bootstrap UCL	13.45	95% Percentile Bootstrap UCL	14.67
95% BCA Bootstrap UCL	14.31		
90% Chebyshev(Mean, Sd) UCL	18.74	95% Chebyshev(Mean, Sd) UCL	22.42
97.5% Chebyshev(Mean, Sd) UCL	27.52	99% Chebyshev(Mean, Sd) UCL	37.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.185	Mean	1.265
Maximum	1.325	Median	1.27
SD	0.0555	Std. Error of Mean	0.0227
Coefficient of Variation	0.0439	Skewness	-0.379
Mean of logged Data	0.234	SD of logged Data	0.0442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.311	95% Adjusted-CLT UCL (Chen-1995)	1.299
		95% Modified-t UCL (Johnson-1978)	1.31

Nonparametric Distribution Free UCLs

95% CLT UCL	1.302	95% Jackknife UCL	1.311
95% Standard Bootstrap UCL	1.299	95% Bootstrap-t UCL	1.307

95% Hall's Bootstrap UCL	1.291	95% Percentile Bootstrap UCL	1.298
95% BCA Bootstrap UCL	1.297		
90% Chebyshev(Mean, Sd) UCL	1.333	95% Chebyshev(Mean, Sd) UCL	1.364
97.5% Chebyshev(Mean, Sd) UCL	1.406	99% Chebyshev(Mean, Sd) UCL	1.49

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.19	Mean	6.343
Maximum	10.2	Median	6.335
SD	3.593	Std. Error of Mean	1.467
Coefficient of Variation	0.566	Skewness	-0.0146
Mean of logged Data	1.682	SD of logged Data	0.663

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.299	95% Adjusted-CLT UCL (Chen-1995)	8.747
		95% Modified-t UCL (Johnson-1978)	9.297

Nonparametric Distribution Free UCLs

95% CLT UCL	8.756	95% Jackknife UCL	9.299
95% Standard Bootstrap UCL	8.547	95% Bootstrap-t UCL	9.352
95% Hall's Bootstrap UCL	8.087	95% Percentile Bootstrap UCL	8.588
95% BCA Bootstrap UCL	8.567		
90% Chebyshev(Mean, Sd) UCL	10.74	95% Chebyshev(Mean, Sd) UCL	12.74
97.5% Chebyshev(Mean, Sd) UCL	15.5	99% Chebyshev(Mean, Sd) UCL	20.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.42	Mean	4.465
Maximum	9.72	Median	3.6
SD	2.729	Std. Error of Mean	1.114
Coefficient of Variation	0.611	Skewness	1.889
Mean of logged Data	1.374	SD of logged Data	0.513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.71	95% Adjusted-CLT UCL (Chen-1995)	7.216
		95% Modified-t UCL (Johnson-1978)	6.854

Nonparametric Distribution Free UCLs

95% CLT UCL	6.298	95% Jackknife UCL	6.71
95% Standard Bootstrap UCL	6.171	95% Bootstrap-t UCL	10.25
95% Hall's Bootstrap UCL	14.46	95% Percentile Bootstrap UCL	6.268
95% BCA Bootstrap UCL	6.747		
90% Chebyshev(Mean, Sd) UCL	7.808	95% Chebyshev(Mean, Sd) UCL	9.322
97.5% Chebyshev(Mean, Sd) UCL	11.42	99% Chebyshev(Mean, Sd) UCL	15.55

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.12	Mean	5.46
Maximum	8.27	Median	5.515
SD	2.782	Std. Error of Mean	1.136
Coefficient of Variation	0.51	Skewness	-0.0799
Mean of logged Data	1.568	SD of logged Data	0.58

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.749	95% Adjusted-CLT UCL (Chen-1995)	7.289
		95% Modified-t UCL (Johnson-1978)	7.742

Nonparametric Distribution Free UCLs

95% CLT UCL	7.328	95% Jackknife UCL	7.749
95% Standard Bootstrap UCL	7.176	95% Bootstrap-t UCL	7.672
95% Hall's Bootstrap UCL	6.548	95% Percentile Bootstrap UCL	7.185
95% BCA Bootstrap UCL	7.178		
90% Chebyshev(Mean, Sd) UCL	8.867	95% Chebyshev(Mean, Sd) UCL	10.41
97.5% Chebyshev(Mean, Sd) UCL	12.55	99% Chebyshev(Mean, Sd) UCL	16.76

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.24	Mean	9.757
Maximum	16.3	Median	10.45
SD	5.865	Std. Error of Mean	2.394
Coefficient of Variation	0.601	Skewness	-0.146
Mean of logged Data	2.077	SD of logged Data	0.744

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.58	95% Adjusted-CLT UCL (Chen-1995)	13.54
		95% Modified-t UCL (Johnson-1978)	14.56

Nonparametric Distribution Free UCLs

95% CLT UCL	13.69	95% Jackknife UCL	14.58
95% Standard Bootstrap UCL	13.43	95% Bootstrap-t UCL	14.61
95% Hall's Bootstrap UCL	12.31	95% Percentile Bootstrap UCL	13.2
95% BCA Bootstrap UCL	13.17		
90% Chebyshev(Mean, Sd) UCL	16.94	95% Chebyshev(Mean, Sd) UCL	20.19
97.5% Chebyshev(Mean, Sd) UCL	24.71	99% Chebyshev(Mean, Sd) UCL	33.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:51:31 AM
From File	05106.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	11.6
Maximum	12.9	Median	11.4
SD	0.81	Std. Error of Mean	0.331
Coefficient of Variation	0.0698	Skewness	0.864
Mean of logged Data	2.449	SD of logged Data	0.0686

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.27	95% Adjusted-CLT UCL (Chen-1995)	12.27
		95% Modified-t UCL (Johnson-1978)	12.29

Nonparametric Distribution Free UCLs

95% CLT UCL	12.14	95% Jackknife UCL	12.27
95% Standard Bootstrap UCL	12.1	95% Bootstrap-t UCL	12.81
95% Hall's Bootstrap UCL	15.87	95% Percentile Bootstrap UCL	12.13
95% BCA Bootstrap UCL	12.17		
90% Chebyshev(Mean, Sd) UCL	12.59	95% Chebyshev(Mean, Sd) UCL	13.04
97.5% Chebyshev(Mean, Sd) UCL	13.66	99% Chebyshev(Mean, Sd) UCL	14.89

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.49	Mean	9.887
Maximum	10.7	Median	10.09
SD	0.845	Std. Error of Mean	0.345
Coefficient of Variation	0.0855	Skewness	-0.944
Mean of logged Data	2.288	SD of logged Data	0.0882

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.58	95% Adjusted-CLT UCL (Chen-1995)	10.31
		95% Modified-t UCL (Johnson-1978)	10.56

Nonparametric Distribution Free UCLs

95% CLT UCL	10.45	95% Jackknife UCL	10.58
95% Standard Bootstrap UCL	10.41	95% Bootstrap-t UCL	10.49
95% Hall's Bootstrap UCL	10.29	95% Percentile Bootstrap UCL	10.39
95% BCA Bootstrap UCL	10.34		
90% Chebyshev(Mean, Sd) UCL	10.92	95% Chebyshev(Mean, Sd) UCL	11.39
97.5% Chebyshev(Mean, Sd) UCL	12.04	99% Chebyshev(Mean, Sd) UCL	13.32

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.1	Mean	45
Maximum	47.7	Median	45.5
SD	2.854	Std. Error of Mean	1.165
Coefficient of Variation	0.0634	Skewness	-1.069
Mean of logged Data	3.805	SD of logged Data	0.0651

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.35	95% Adjusted-CLT UCL (Chen-1995)	46.37
		95% Modified-t UCL (Johnson-1978)	47.26

Nonparametric Distribution Free UCLs

95% CLT UCL	46.92	95% Jackknife UCL	47.35
95% Standard Bootstrap UCL	46.68	95% Bootstrap-t UCL	46.69
95% Hall's Bootstrap UCL	46.39	95% Percentile Bootstrap UCL	46.63
95% BCA Bootstrap UCL	46.47		
90% Chebyshev(Mean, Sd) UCL	48.5	95% Chebyshev(Mean, Sd) UCL	50.08
97.5% Chebyshev(Mean, Sd) UCL	52.28	99% Chebyshev(Mean, Sd) UCL	56.59

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.852	Mean	1.425
Maximum	1.96	Median	1.365
SD	0.457	Std. Error of Mean	0.187
Coefficient of Variation	0.321	Skewness	0.179
Mean of logged Data	0.31	SD of logged Data	0.332

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.801	95% Adjusted-CLT UCL (Chen-1995)	1.747
		95% Modified-t UCL (Johnson-1978)	1.804

Nonparametric Distribution Free UCLs

95% CLT UCL	1.732	95% Jackknife UCL	1.801
95% Standard Bootstrap UCL	1.703	95% Bootstrap-t UCL	1.913
95% Hall's Bootstrap UCL	1.914	95% Percentile Bootstrap UCL	1.72
95% BCA Bootstrap UCL	1.697		
90% Chebyshev(Mean, Sd) UCL	1.985	95% Chebyshev(Mean, Sd) UCL	2.239
97.5% Chebyshev(Mean, Sd) UCL	2.591	99% Chebyshev(Mean, Sd) UCL	3.282

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.486	Mean	0.516
Maximum	0.554	Median	0.515
SD	0.0234	Std. Error of Mean	0.00954
Coefficient of Variation	0.0453	Skewness	0.626
Mean of logged Data	-0.663	SD of logged Data	0.045

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.535	95% Adjusted-CLT UCL (Chen-1995)	0.534
		95% Modified-t UCL (Johnson-1978)	0.535

Nonparametric Distribution Free UCLs

95% CLT UCL	0.531	95% Jackknife UCL	0.535
95% Standard Bootstrap UCL	0.53	95% Bootstrap-t UCL	0.538
95% Hall's Bootstrap UCL	0.544	95% Percentile Bootstrap UCL	0.531
95% BCA Bootstrap UCL	0.532		
90% Chebyshev(Mean, Sd) UCL	0.544	95% Chebyshev(Mean, Sd) UCL	0.557
97.5% Chebyshev(Mean, Sd) UCL	0.575	99% Chebyshev(Mean, Sd) UCL	0.611

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.6	Mean	1.952
Maximum	2.13	Median	2.015
SD	0.197	Std. Error of Mean	0.0805
Coefficient of Variation	0.101	Skewness	-1.365
Mean of logged Data	0.664	SD of logged Data	0.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.114	95% Adjusted-CLT UCL (Chen-1995)	2.036
		95% Modified-t UCL (Johnson-1978)	2.106

Nonparametric Distribution Free UCLs

95% CLT UCL	2.084	95% Jackknife UCL	2.114
95% Standard Bootstrap UCL	2.072	95% Bootstrap-t UCL	2.072
95% Hall's Bootstrap UCL	2.043	95% Percentile Bootstrap UCL	2.06
95% BCA Bootstrap UCL	2.047		
90% Chebyshev(Mean, Sd) UCL	2.193	95% Chebyshev(Mean, Sd) UCL	2.302
97.5% Chebyshev(Mean, Sd) UCL	2.454	99% Chebyshev(Mean, Sd) UCL	2.752

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	9.216
Maximum	18.1	Median	8.365
SD	7.911	Std. Error of Mean	3.23
Coefficient of Variation	0.858	Skewness	0.0793
Mean of logged Data	1.758	SD of logged Data	1.134

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.72	95% Adjusted-CLT UCL (Chen-1995)	14.64
		95% Modified-t UCL (Johnson-1978)	15.74

Nonparametric Distribution Free UCLs

95% CLT UCL	14.53	95% Jackknife UCL	15.72
95% Standard Bootstrap UCL	14.12	95% Bootstrap-t UCL	15.66
95% Hall's Bootstrap UCL	11.93	95% Percentile Bootstrap UCL	14.25
95% BCA Bootstrap UCL	14		
90% Chebyshev(Mean, Sd) UCL	18.91	95% Chebyshev(Mean, Sd) UCL	23.29
97.5% Chebyshev(Mean, Sd) UCL	29.39	99% Chebyshev(Mean, Sd) UCL	41.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.83	Mean	11.93
Maximum	23.6	Median	11.2
SD	10.97	Std. Error of Mean	4.478
Coefficient of Variation	0.919	Skewness	0.0371
Mean of logged Data	1.879	SD of logged Data	1.322

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.96	95% Adjusted-CLT UCL (Chen-1995)	19.37
		95% Modified-t UCL (Johnson-1978)	20.97

Nonparametric Distribution Free UCLs

95% CLT UCL	19.3	95% Jackknife UCL	20.96
95% Standard Bootstrap UCL	18.53	95% Bootstrap-t UCL	22.03
95% Hall's Bootstrap UCL	15.62	95% Percentile Bootstrap UCL	18.8
95% BCA Bootstrap UCL	18.85		
90% Chebyshev(Mean, Sd) UCL	25.37	95% Chebyshev(Mean, Sd) UCL	31.45
97.5% Chebyshev(Mean, Sd) UCL	39.9	99% Chebyshev(Mean, Sd) UCL	56.49

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.24	Mean	16.97
Maximum	33.6	Median	15.86
SD	15.57	Std. Error of Mean	6.356
Coefficient of Variation	0.918	Skewness	0.0419
Mean of logged Data	2.232	SD of logged Data	1.324

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.77	95% Adjusted-CLT UCL (Chen-1995)	27.54
		95% Modified-t UCL (Johnson-1978)	29.79

Nonparametric Distribution Free UCLs

95% CLT UCL	27.42	95% Jackknife UCL	29.77
95% Standard Bootstrap UCL	26.19	95% Bootstrap-t UCL	29.76
95% Hall's Bootstrap UCL	22.26	95% Percentile Bootstrap UCL	26.49
95% BCA Bootstrap UCL	26.86		
90% Chebyshev(Mean, Sd) UCL	36.04	95% Chebyshev(Mean, Sd) UCL	44.67
97.5% Chebyshev(Mean, Sd) UCL	56.66	99% Chebyshev(Mean, Sd) UCL	80.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.035	Mean	10.22
Maximum	18.8	Median	9.638
SD	7.77	Std. Error of Mean	3.172
Coefficient of Variation	0.76	Skewness	0.055
Mean of logged Data	2.001	SD of logged Data	0.928

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.61	95% Adjusted-CLT UCL (Chen-1995)	15.52
		95% Modified-t UCL (Johnson-1978)	16.63

Nonparametric Distribution Free UCLs

95% CLT UCL	15.44	95% Jackknife UCL	16.61
95% Standard Bootstrap UCL	15.04	95% Bootstrap-t UCL	16.79
95% Hall's Bootstrap UCL	12.86	95% Percentile Bootstrap UCL	14.98
95% BCA Bootstrap UCL	14.98		
90% Chebyshev(Mean, Sd) UCL	19.74	95% Chebyshev(Mean, Sd) UCL	24.05
97.5% Chebyshev(Mean, Sd) UCL	30.03	99% Chebyshev(Mean, Sd) UCL	41.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	6.949
Maximum	13.2	Median	6.315
SD	5.418	Std. Error of Mean	2.212
Coefficient of Variation	0.78	Skewness	0.101
Mean of logged Data	1.596	SD of logged Data	0.957

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.41	95% Adjusted-CLT UCL (Chen-1995)	10.68
		95% Modified-t UCL (Johnson-1978)	11.42

Nonparametric Distribution Free UCLs

95% CLT UCL	10.59	95% Jackknife UCL	11.41
95% Standard Bootstrap UCL	10.27	95% Bootstrap-t UCL	12.39
95% Hall's Bootstrap UCL	8.82	95% Percentile Bootstrap UCL	10.41
95% BCA Bootstrap UCL	10.42		
90% Chebyshev(Mean, Sd) UCL	13.59	95% Chebyshev(Mean, Sd) UCL	16.59
97.5% Chebyshev(Mean, Sd) UCL	20.76	99% Chebyshev(Mean, Sd) UCL	28.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	13.36
Maximum	26.5	Median	12.26
SD	12.39	Std. Error of Mean	5.058
Coefficient of Variation	0.927	Skewness	0.0498
Mean of logged Data	1.976	SD of logged Data	1.343

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.55	95% Adjusted-CLT UCL (Chen-1995)	21.79
		95% Modified-t UCL (Johnson-1978)	23.57

Nonparametric Distribution Free UCLs

95% CLT UCL	21.68	95% Jackknife UCL	23.55
95% Standard Bootstrap UCL	21.01	95% Bootstrap-t UCL	23.22
95% Hall's Bootstrap UCL	17.57	95% Percentile Bootstrap UCL	21.05
95% BCA Bootstrap UCL	21.23		
90% Chebyshev(Mean, Sd) UCL	28.54	95% Chebyshev(Mean, Sd) UCL	35.41
97.5% Chebyshev(Mean, Sd) UCL	44.95	99% Chebyshev(Mean, Sd) UCL	63.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.035	Mean	3.815
Maximum	4.85	Median	3.698
SD	0.741	Std. Error of Mean	0.303
Coefficient of Variation	0.194	Skewness	0.357
Mean of logged Data	1.323	SD of logged Data	0.193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.425	95% Adjusted-CLT UCL (Chen-1995)	4.36
		95% Modified-t UCL (Johnson-1978)	4.432

Nonparametric Distribution Free UCLs

95% CLT UCL	4.313	95% Jackknife UCL	4.425
95% Standard Bootstrap UCL	4.271	95% Bootstrap-t UCL	4.688
95% Hall's Bootstrap UCL	4.16	95% Percentile Bootstrap UCL	4.273
95% BCA Bootstrap UCL	4.258		
90% Chebyshev(Mean, Sd) UCL	4.723	95% Chebyshev(Mean, Sd) UCL	5.134
97.5% Chebyshev(Mean, Sd) UCL	5.705	99% Chebyshev(Mean, Sd) UCL	6.827

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.09	Mean	16.88
Maximum	34.6	Median	14.34
SD	16.14	Std. Error of Mean	6.587
Coefficient of Variation	0.956	Skewness	0.138
Mean of logged Data	2.155	SD of logged Data	1.412

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.15	95% Adjusted-CLT UCL (Chen-1995)	28.11
		95% Modified-t UCL (Johnson-1978)	30.22

Nonparametric Distribution Free UCLs

95% CLT UCL	27.72	95% Jackknife UCL	30.15
95% Standard Bootstrap UCL	26.91	95% Bootstrap-t UCL	34.7
95% Hall's Bootstrap UCL	22.55	95% Percentile Bootstrap UCL	27.4
95% BCA Bootstrap UCL	27.42		
90% Chebyshev(Mean, Sd) UCL	36.64	95% Chebyshev(Mean, Sd) UCL	45.59
97.5% Chebyshev(Mean, Sd) UCL	58.02	99% Chebyshev(Mean, Sd) UCL	82.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.215	Mean	1.268
Maximum	1.31	Median	1.275
SD	0.0337	Std. Error of Mean	0.0138
Coefficient of Variation	0.0266	Skewness	-0.537
Mean of logged Data	0.237	SD of logged Data	0.0267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.295	95% Adjusted-CLT UCL (Chen-1995)	1.287
		95% Modified-t UCL (Johnson-1978)	1.295

Nonparametric Distribution Free UCLs

95% CLT UCL	1.29	95% Jackknife UCL	1.295
95% Standard Bootstrap UCL	1.288	95% Bootstrap-t UCL	1.293
95% Hall's Bootstrap UCL	1.287	95% Percentile Bootstrap UCL	1.287
95% BCA Bootstrap UCL	1.286		
90% Chebyshev(Mean, Sd) UCL	1.309	95% Chebyshev(Mean, Sd) UCL	1.328
97.5% Chebyshev(Mean, Sd) UCL	1.353	99% Chebyshev(Mean, Sd) UCL	1.404

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.035	Mean	11.86
Maximum	22.4	Median	11.14
SD	9.569	Std. Error of Mean	3.907
Coefficient of Variation	0.807	Skewness	0.0537
Mean of logged Data	2.088	SD of logged Data	1.023

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.73	95% Adjusted-CLT UCL (Chen-1995)	18.37
		95% Modified-t UCL (Johnson-1978)	19.74

Nonparametric Distribution Free UCLs

95% CLT UCL	18.28	95% Jackknife UCL	19.73
95% Standard Bootstrap UCL	17.6	95% Bootstrap-t UCL	19.91
95% Hall's Bootstrap UCL	15.1	95% Percentile Bootstrap UCL	17.87
95% BCA Bootstrap UCL	17.71		
90% Chebyshev(Mean, Sd) UCL	23.57	95% Chebyshev(Mean, Sd) UCL	28.88
97.5% Chebyshev(Mean, Sd) UCL	36.25	99% Chebyshev(Mean, Sd) UCL	50.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.45	Mean	2.89
Maximum	7.32	Median	2.08
SD	2.196	Std. Error of Mean	0.896
Coefficient of Variation	0.76	Skewness	2.322
Mean of logged Data	0.899	SD of logged Data	0.563

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	4.696	95% Adjusted-CLT UCL (Chen-1995)	5.272
		95% Modified-t UCL (Johnson-1978)	4.838

Nonparametric Distribution Free UCLs

95% CLT UCL	4.364	95% Jackknife UCL	4.696
95% Standard Bootstrap UCL	4.312	95% Bootstrap-t UCL	11.76
95% Hall's Bootstrap UCL	13.45	95% Percentile Bootstrap UCL	4.562
95% BCA Bootstrap UCL	4.767		
90% Chebyshev(Mean, Sd) UCL	5.579	95% Chebyshev(Mean, Sd) UCL	6.797
97.5% Chebyshev(Mean, Sd) UCL	8.488	99% Chebyshev(Mean, Sd) UCL	11.81

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.797

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.035	Mean	7.092
Maximum	12.5	Median	6.098
SD	4.448	Std. Error of Mean	1.816
Coefficient of Variation	0.627	Skewness	0.258
Mean of logged Data	1.772	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.75	95% Adjusted-CLT UCL (Chen-1995)	10.28
		95% Modified-t UCL (Johnson-1978)	10.78

Nonparametric Distribution Free UCLs

95% CLT UCL	10.08	95% Jackknife UCL	10.75
95% Standard Bootstrap UCL	9.827	95% Bootstrap-t UCL	10.36
95% Hall's Bootstrap UCL	8.695	95% Percentile Bootstrap UCL	9.876
95% BCA Bootstrap UCL	9.619		
90% Chebyshev(Mean, Sd) UCL	12.54	95% Chebyshev(Mean, Sd) UCL	15.01
97.5% Chebyshev(Mean, Sd) UCL	18.43	99% Chebyshev(Mean, Sd) UCL	25.16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.19	Mean	17.21
Maximum	34.8	Median	14.76
SD	16.03	Std. Error of Mean	6.546
Coefficient of Variation	0.932	Skewness	0.125
Mean of logged Data	2.235	SD of logged Data	1.337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.4	95% Adjusted-CLT UCL (Chen-1995)	28.33
		95% Modified-t UCL (Johnson-1978)	30.46

Nonparametric Distribution Free UCLs

95% CLT UCL	27.98	95% Jackknife UCL	30.4
95% Standard Bootstrap UCL	27.14	95% Bootstrap-t UCL	29.13
95% Hall's Bootstrap UCL	22.84	95% Percentile Bootstrap UCL	27.22
95% BCA Bootstrap UCL	27.4		
90% Chebyshev(Mean, Sd) UCL	36.85	95% Chebyshev(Mean, Sd) UCL	45.74
97.5% Chebyshev(Mean, Sd) UCL	58.09	99% Chebyshev(Mean, Sd) UCL	82.34

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:57:19 AM
From File	05107.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.1	Mean	205.4
Maximum	672	Median	129.9
SD	254.9	Std. Error of Mean	104.1
Coefficient of Variation	1.241	Skewness	1.499
Mean of logged Data	4.415	SD of logged Data	1.626

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	415.1	95% Adjusted-CLT UCL (Chen-1995)	444.7
		95% Modified-t UCL (Johnson-1978)	425.8

Nonparametric Distribution Free UCLs

95% CLT UCL	376.6	95% Jackknife UCL	415.1
95% Standard Bootstrap UCL	360.3	95% Bootstrap-t UCL	568.5
95% Hall's Bootstrap UCL	950.6	95% Percentile Bootstrap UCL	384.2
95% BCA Bootstrap UCL	422.1		
90% Chebyshev(Mean, Sd) UCL	517.6	95% Chebyshev(Mean, Sd) UCL	659.1
97.5% Chebyshev(Mean, Sd) UCL	855.4	99% Chebyshev(Mean, Sd) UCL	1241

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.4	Mean	16.08
Maximum	25.9	Median	14.9
SD	5.427	Std. Error of Mean	2.216
Coefficient of Variation	0.337	Skewness	1.402
Mean of logged Data	2.736	SD of logged Data	0.309

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.55	95% Adjusted-CLT UCL (Chen-1995)	21.08
		95% Modified-t UCL (Johnson-1978)	20.76

Nonparametric Distribution Free UCLs

95% CLT UCL	19.73	95% Jackknife UCL	20.55
95% Standard Bootstrap UCL	19.43	95% Bootstrap-t UCL	24.12
95% Hall's Bootstrap UCL	25.13	95% Percentile Bootstrap UCL	19.82
95% BCA Bootstrap UCL	20.62		
90% Chebyshev(Mean, Sd) UCL	22.73	95% Chebyshev(Mean, Sd) UCL	25.74
97.5% Chebyshev(Mean, Sd) UCL	29.92	99% Chebyshev(Mean, Sd) UCL	38.13

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	52.9	Mean	74.43
Maximum	99.3	Median	73.3
SD	20.69	Std. Error of Mean	8.446
Coefficient of Variation	0.278	Skewness	0.106
Mean of logged Data	4.277	SD of logged Data	0.283

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	91.45	95% Adjusted-CLT UCL (Chen-1995)	88.72
		95% Modified-t UCL (Johnson-1978)	91.51

Nonparametric Distribution Free UCLs

95% CLT UCL	88.33	95% Jackknife UCL	91.45
95% Standard Bootstrap UCL	87.33	95% Bootstrap-t UCL	92.68
95% Hall's Bootstrap UCL	82.8	95% Percentile Bootstrap UCL	87.1
95% BCA Bootstrap UCL	86.53		
90% Chebyshev(Mean, Sd) UCL	99.77	95% Chebyshev(Mean, Sd) UCL	111.2
97.5% Chebyshev(Mean, Sd) UCL	127.2	99% Chebyshev(Mean, Sd) UCL	158.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.781	Mean	1.499
Maximum	2.21	Median	1.66
SD	0.536	Std. Error of Mean	0.219
Coefficient of Variation	0.357	Skewness	-0.293
Mean of logged Data	0.342	SD of logged Data	0.401

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.939	95% Adjusted-CLT UCL (Chen-1995)	1.83
		95% Modified-t UCL (Johnson-1978)	1.935

Nonparametric Distribution Free UCLs

95% CLT UCL	1.858	95% Jackknife UCL	1.939
95% Standard Bootstrap UCL	1.844	95% Bootstrap-t UCL	1.925
95% Hall's Bootstrap UCL	1.781	95% Percentile Bootstrap UCL	1.838
95% BCA Bootstrap UCL	1.809		
90% Chebyshev(Mean, Sd) UCL	2.155	95% Chebyshev(Mean, Sd) UCL	2.452
97.5% Chebyshev(Mean, Sd) UCL	2.864	99% Chebyshev(Mean, Sd) UCL	3.675

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.496	Mean	0.688
Maximum	1.33	Median	0.523
SD	0.328	Std. Error of Mean	0.134
Coefficient of Variation	0.477	Skewness	2.056
Mean of logged Data	-0.447	SD of logged Data	0.39

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.958	95% Adjusted-CLT UCL (Chen-1995)	1.029
		95% Modified-t UCL (Johnson-1978)	0.977

Nonparametric Distribution Free UCLs

95% CLT UCL	0.909	95% Jackknife UCL	0.958
95% Standard Bootstrap UCL	0.891	95% Bootstrap-t UCL	4.97
95% Hall's Bootstrap UCL	2.963	95% Percentile Bootstrap UCL	0.924
95% BCA Bootstrap UCL	0.964		
90% Chebyshev(Mean, Sd) UCL	1.09	95% Chebyshev(Mean, Sd) UCL	1.273
97.5% Chebyshev(Mean, Sd) UCL	1.525	99% Chebyshev(Mean, Sd) UCL	2.022

Suggested UCL to Use

95% Student's-t UCL	0.958	or 95% Modified-t UCL	0.977

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.8	Mean	2.443
Maximum	3.8	Median	2.075
SD	0.765	Std. Error of Mean	0.312
Coefficient of Variation	0.313	Skewness	1.439
Mean of logged Data	0.858	SD of logged Data	0.283

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.072	95% Adjusted-CLT UCL (Chen-1995)	3.153
		95% Modified-t UCL (Johnson-1978)	3.103

Nonparametric Distribution Free UCLs

95% CLT UCL	2.957	95% Jackknife UCL	3.072
95% Standard Bootstrap UCL	2.905	95% Bootstrap-t UCL	5.357
95% Hall's Bootstrap UCL	8.835	95% Percentile Bootstrap UCL	2.92
95% BCA Bootstrap UCL	3.027		
90% Chebyshev(Mean, Sd) UCL	3.38	95% Chebyshev(Mean, Sd) UCL	3.804
97.5% Chebyshev(Mean, Sd) UCL	4.393	99% Chebyshev(Mean, Sd) UCL	5.549

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.61	Mean	12.43
Maximum	24.7	Median	10.63
SD	9.288	Std. Error of Mean	3.792
Coefficient of Variation	0.747	Skewness	0.299
Mean of logged Data	2.216	SD of logged Data	0.91

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.07	95% Adjusted-CLT UCL (Chen-1995)	19.16
		95% Modified-t UCL (Johnson-1978)	20.15

Nonparametric Distribution Free UCLs

95% CLT UCL	18.67	95% Jackknife UCL	20.07
95% Standard Bootstrap UCL	18.06	95% Bootstrap-t UCL	19.81
95% Hall's Bootstrap UCL	16.64	95% Percentile Bootstrap UCL	18.06
95% BCA Bootstrap UCL	18.25		
90% Chebyshev(Mean, Sd) UCL	23.8	95% Chebyshev(Mean, Sd) UCL	28.96
97.5% Chebyshev(Mean, Sd) UCL	36.11	99% Chebyshev(Mean, Sd) UCL	50.16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.15	Mean	14.96
Maximum	29.6	Median	13.85
SD	11.25	Std. Error of Mean	4.594
Coefficient of Variation	0.752	Skewness	0.198
Mean of logged Data	2.388	SD of logged Data	0.931

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.21	95% Adjusted-CLT UCL (Chen-1995)	22.91
		95% Modified-t UCL (Johnson-1978)	24.27

Nonparametric Distribution Free UCLs

95% CLT UCL	22.51	95% Jackknife UCL	24.21
95% Standard Bootstrap UCL	21.81	95% Bootstrap-t UCL	26.14
95% Hall's Bootstrap UCL	19.41	95% Percentile Bootstrap UCL	22
95% BCA Bootstrap UCL	22.28		
90% Chebyshev(Mean, Sd) UCL	28.74	95% Chebyshev(Mean, Sd) UCL	34.98
97.5% Chebyshev(Mean, Sd) UCL	43.65	99% Chebyshev(Mean, Sd) UCL	60.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.84	Mean	22.28
Maximum	40.9	Median	20.2
SD	15.88	Std. Error of Mean	6.485
Coefficient of Variation	0.713	Skewness	0.133
Mean of logged Data	2.831	SD of logged Data	0.852

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.35	95% Adjusted-CLT UCL (Chen-1995)	33.32
		95% Modified-t UCL (Johnson-1978)	35.41

Nonparametric Distribution Free UCLs

95% CLT UCL	32.95	95% Jackknife UCL	35.35
95% Standard Bootstrap UCL	32.1	95% Bootstrap-t UCL	34.61
95% Hall's Bootstrap UCL	28.41	95% Percentile Bootstrap UCL	32.23
95% BCA Bootstrap UCL	31.77		
90% Chebyshev(Mean, Sd) UCL	41.73	95% Chebyshev(Mean, Sd) UCL	50.55
97.5% Chebyshev(Mean, Sd) UCL	62.78	99% Chebyshev(Mean, Sd) UCL	86.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.89	Mean	11.21
Maximum	21.8	Median	10.61
SD	8.243	Std. Error of Mean	3.365
Coefficient of Variation	0.735	Skewness	0.185
Mean of logged Data	2.125	SD of logged Data	0.881

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.99	95% Adjusted-CLT UCL (Chen-1995)	17.02
		95% Modified-t UCL (Johnson-1978)	18.03

Nonparametric Distribution Free UCLs

95% CLT UCL	16.74	95% Jackknife UCL	17.99
95% Standard Bootstrap UCL	16.24	95% Bootstrap-t UCL	19.06
95% Hall's Bootstrap UCL	14.37	95% Percentile Bootstrap UCL	16.25
95% BCA Bootstrap UCL	16.44		
90% Chebyshev(Mean, Sd) UCL	21.3	95% Chebyshev(Mean, Sd) UCL	25.88
97.5% Chebyshev(Mean, Sd) UCL	32.22	99% Chebyshev(Mean, Sd) UCL	44.69

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.06	Mean	8.862
Maximum	16.5	Median	7.675
SD	6.491	Std. Error of Mean	2.65
Coefficient of Variation	0.733	Skewness	0.201
Mean of logged Data	1.891	SD of logged Data	0.885

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.2	95% Adjusted-CLT UCL (Chen-1995)	13.45

		95% Modified-t UCL (Johnson-1978)	14.24

Nonparametric Distribution Free UCLs

95% CLT UCL	13.22	95% Jackknife UCL	14.2
95% Standard Bootstrap UCL	12.88	95% Bootstrap-t UCL	13.74
95% Hall's Bootstrap UCL	11.47	95% Percentile Bootstrap UCL	12.98
95% BCA Bootstrap UCL	12.59		
90% Chebyshev(Mean, Sd) UCL	16.81	95% Chebyshev(Mean, Sd) UCL	20.41
97.5% Chebyshev(Mean, Sd) UCL	25.41	99% Chebyshev(Mean, Sd) UCL	35.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.43	Mean	20.96
Maximum	42	Median	16.93
SD	16.54	Std. Error of Mean	6.753
Coefficient of Variation	0.789	Skewness	0.337
Mean of logged Data	2.704	SD of logged Data	0.954

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.56	95% Adjusted-CLT UCL (Chen-1995)	33.05
		95% Modified-t UCL (Johnson-1978)	34.72

Nonparametric Distribution Free UCLs

95% CLT UCL	32.06	95% Jackknife UCL	34.56
95% Standard Bootstrap UCL	31.35	95% Bootstrap-t UCL	34.42
95% Hall's Bootstrap UCL	27.86	95% Percentile Bootstrap UCL	30.98
95% BCA Bootstrap UCL	31.49		
90% Chebyshev(Mean, Sd) UCL	41.21	95% Chebyshev(Mean, Sd) UCL	50.39
97.5% Chebyshev(Mean, Sd) UCL	63.12	99% Chebyshev(Mean, Sd) UCL	88.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.095	Mean	4.152
Maximum	6.68	Median	3.785
SD	1.373	Std. Error of Mean	0.561
Coefficient of Variation	0.331	Skewness	1.537
Mean of logged Data	1.384	SD of logged Data	0.298

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.281	95% Adjusted-CLT UCL (Chen-1995)	5.45
		95% Modified-t UCL (Johnson-1978)	5.34

Nonparametric Distribution Free UCLs

95% CLT UCL	5.074	95% Jackknife UCL	5.281
95% Standard Bootstrap UCL	4.99	95% Bootstrap-t UCL	6.289
95% Hall's Bootstrap UCL	8.023	95% Percentile Bootstrap UCL	5.117
95% BCA Bootstrap UCL	5.306		
90% Chebyshev(Mean, Sd) UCL	5.833	95% Chebyshev(Mean, Sd) UCL	6.595
97.5% Chebyshev(Mean, Sd) UCL	7.652	99% Chebyshev(Mean, Sd) UCL	9.729

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.23	Mean	33.62
Maximum	90.9	Median	21.65
SD	33.1	Std. Error of Mean	13.51
Coefficient of Variation	0.984	Skewness	1.217
Mean of logged Data	3.054	SD of logged Data	1.095

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	60.85	95% Adjusted-CLT UCL (Chen-1995)	63.02
		95% Modified-t UCL (Johnson-1978)	61.97

Nonparametric Distribution Free UCLs

95% CLT UCL	55.85	95% Jackknife UCL	60.85

95% Standard Bootstrap UCL	53.54	95% Bootstrap-t UCL	103
95% Hall's Bootstrap UCL	155.3	95% Percentile Bootstrap UCL	54.85
95% BCA Bootstrap UCL	58.15		
90% Chebyshev(Mean, Sd) UCL	74.16	95% Chebyshev(Mean, Sd) UCL	92.52
97.5% Chebyshev(Mean, Sd) UCL	118	99% Chebyshev(Mean, Sd) UCL	168.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.14	Mean	1.264
Maximum	1.33	Median	1.278
SD	0.0692	Std. Error of Mean	0.0282
Coefficient of Variation	0.0547	Skewness	-1.323
Mean of logged Data	0.233	SD of logged Data	0.0562

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.321	95% Adjusted-CLT UCL (Chen-1995)	1.294
		95% Modified-t UCL (Johnson-1978)	1.319

Nonparametric Distribution Free UCLs

95% CLT UCL	1.311	95% Jackknife UCL	1.321
95% Standard Bootstrap UCL	1.307	95% Bootstrap-t UCL	1.306
95% Hall's Bootstrap UCL	1.298	95% Percentile Bootstrap UCL	1.303
95% BCA Bootstrap UCL	1.295		
90% Chebyshev(Mean, Sd) UCL	1.349	95% Chebyshev(Mean, Sd) UCL	1.387
97.5% Chebyshev(Mean, Sd) UCL	1.441	99% Chebyshev(Mean, Sd) UCL	1.545

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	3.28	Mean	13.47
Maximum	26.3	Median	12.69
SD	10.04	Std. Error of Mean	4.099
Coefficient of Variation	0.745	Skewness	0.176
Mean of logged Data	2.296	SD of logged Data	0.903

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.73	95% Adjusted-CLT UCL (Chen-1995)	20.53
		95% Modified-t UCL (Johnson-1978)	21.78

Nonparametric Distribution Free UCLs

95% CLT UCL	20.21	95% Jackknife UCL	21.73
95% Standard Bootstrap UCL	19.47	95% Bootstrap-t UCL	23.2
95% Hall's Bootstrap UCL	17.32	95% Percentile Bootstrap UCL	19.78
95% BCA Bootstrap UCL	19.89		
90% Chebyshev(Mean, Sd) UCL	25.77	95% Chebyshev(Mean, Sd) UCL	31.34
97.5% Chebyshev(Mean, Sd) UCL	39.07	99% Chebyshev(Mean, Sd) UCL	54.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.48	Mean	2.32
Maximum	3.04	Median	2.405
SD	0.556	Std. Error of Mean	0.227
Coefficient of Variation	0.24	Skewness	-0.416
Mean of logged Data	0.815	SD of logged Data	0.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.777	95% Adjusted-CLT UCL (Chen-1995)	2.652
		95% Modified-t UCL (Johnson-1978)	2.771

Nonparametric Distribution Free UCLs

95% CLT UCL	2.693	95% Jackknife UCL	2.777
95% Standard Bootstrap UCL	2.668	95% Bootstrap-t UCL	2.733

95% Hall's Bootstrap UCL	2.646	95% Percentile Bootstrap UCL	2.648
95% BCA Bootstrap UCL	2.652		
90% Chebyshev(Mean, Sd) UCL	3.001	95% Chebyshev(Mean, Sd) UCL	3.309
97.5% Chebyshev(Mean, Sd) UCL	3.737	99% Chebyshev(Mean, Sd) UCL	4.578

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.175	Mean	16.21
Maximum	59.2	Median	7.035
SD	21.79	Std. Error of Mean	8.898
Coefficient of Variation	1.344	Skewness	2.114
Mean of logged Data	2.161	SD of logged Data	1.168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.14	95% Adjusted-CLT UCL (Chen-1995)	39.05
		95% Modified-t UCL (Johnson-1978)	35.42

Nonparametric Distribution Free UCLs

95% CLT UCL	30.85	95% Jackknife UCL	34.14
95% Standard Bootstrap UCL	29.44	95% Bootstrap-t UCL	80.99
95% Hall's Bootstrap UCL	109.9	95% Percentile Bootstrap UCL	32.5
95% BCA Bootstrap UCL	40.55		
90% Chebyshev(Mean, Sd) UCL	42.91	95% Chebyshev(Mean, Sd) UCL	55
97.5% Chebyshev(Mean, Sd) UCL	71.78	99% Chebyshev(Mean, Sd) UCL	104.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	5.29	Mean	32.17
Maximum	80.8	Median	21.95
SD	29.6	Std. Error of Mean	12.08
Coefficient of Variation	0.92	Skewness	0.989
Mean of logged Data	3.052	SD of logged Data	1.052

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.52	95% Adjusted-CLT UCL (Chen-1995)	57.26
		95% Modified-t UCL (Johnson-1978)	57.33

Nonparametric Distribution Free UCLs

95% CLT UCL	52.04	95% Jackknife UCL	56.52
95% Standard Bootstrap UCL	50.16	95% Bootstrap-t UCL	70.77
95% Hall's Bootstrap UCL	75.08	95% Percentile Bootstrap UCL	50.38
95% BCA Bootstrap UCL	51.78		
90% Chebyshev(Mean, Sd) UCL	68.42	95% Chebyshev(Mean, Sd) UCL	84.84
97.5% Chebyshev(Mean, Sd) UCL	107.6	99% Chebyshev(Mean, Sd) UCL	152.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:58:23 AM
From File	05166A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.4	Mean	42.78
Maximum	88.7	Median	36.05
SD	31.19	Std. Error of Mean	12.73
Coefficient of Variation	0.729	Skewness	0.615
Mean of logged Data	3.492	SD of logged Data	0.837

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	68.44	95% Adjusted-CLT UCL (Chen-1995)	67.15
		95% Modified-t UCL (Johnson-1978)	68.98

Nonparametric Distribution Free UCLs

95% CLT UCL	63.73	95% Jackknife UCL	68.44
95% Standard Bootstrap UCL	62.06	95% Bootstrap-t UCL	85.56
95% Hall's Bootstrap UCL	98.83	95% Percentile Bootstrap UCL	61.97
95% BCA Bootstrap UCL	64.9		
90% Chebyshev(Mean, Sd) UCL	80.99	95% Chebyshev(Mean, Sd) UCL	98.29
97.5% Chebyshev(Mean, Sd) UCL	122.3	99% Chebyshev(Mean, Sd) UCL	169.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.69	Mean	13.53
Maximum	15.3	Median	14
SD	2.115	Std. Error of Mean	0.864
Coefficient of Variation	0.156	Skewness	-1.429
Mean of logged Data	2.593	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.27	95% Adjusted-CLT UCL (Chen-1995)	14.41
		95% Modified-t UCL (Johnson-1978)	15.19

Nonparametric Distribution Free UCLs

95% CLT UCL	14.95	95% Jackknife UCL	15.27
95% Standard Bootstrap UCL	14.83	95% Bootstrap-t UCL	14.86
95% Hall's Bootstrap UCL	14.49	95% Percentile Bootstrap UCL	14.73
95% BCA Bootstrap UCL	14.5		
90% Chebyshev(Mean, Sd) UCL	16.12	95% Chebyshev(Mean, Sd) UCL	17.3
97.5% Chebyshev(Mean, Sd) UCL	18.92	99% Chebyshev(Mean, Sd) UCL	22.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.7	Mean	79.57
Maximum	96.9	Median	84.35
SD	19.68	Std. Error of Mean	8.033
Coefficient of Variation	0.247	Skewness	-1.12
Mean of logged Data	4.346	SD of logged Data	0.286

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	95.75	95% Adjusted-CLT UCL (Chen-1995)	88.86
		95% Modified-t UCL (Johnson-1978)	95.14

Nonparametric Distribution Free UCLs

95% CLT UCL	92.78	95% Jackknife UCL	95.75
95% Standard Bootstrap UCL	91.49	95% Bootstrap-t UCL	91.88
95% Hall's Bootstrap UCL	89.23	95% Percentile Bootstrap UCL	91.03
95% BCA Bootstrap UCL	89.05		
90% Chebyshev(Mean, Sd) UCL	103.7	95% Chebyshev(Mean, Sd) UCL	114.6
97.5% Chebyshev(Mean, Sd) UCL	129.7	99% Chebyshev(Mean, Sd) UCL	159.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.895	Mean	1.465
Maximum	1.97	Median	1.55
SD	0.502	Std. Error of Mean	0.205
Coefficient of Variation	0.343	Skewness	-0.202
Mean of logged Data	0.328	SD of logged Data	0.367

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.877	95% Adjusted-CLT UCL (Chen-1995)	1.783
		95% Modified-t UCL (Johnson-1978)	1.874

Nonparametric Distribution Free UCLs

95% CLT UCL	1.801	95% Jackknife UCL	1.877
95% Standard Bootstrap UCL	1.766	95% Bootstrap-t UCL	1.882
95% Hall's Bootstrap UCL	1.675	95% Percentile Bootstrap UCL	1.77
95% BCA Bootstrap UCL	1.775		
90% Chebyshev(Mean, Sd) UCL	2.079	95% Chebyshev(Mean, Sd) UCL	2.357
97.5% Chebyshev(Mean, Sd) UCL	2.744	99% Chebyshev(Mean, Sd) UCL	3.502

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.46	Mean	0.498
Maximum	0.525	Median	0.502

SD	0.0253	Std. Error of Mean	0.0103
Coefficient of Variation	0.0508	Skewness	-0.532
Mean of logged Data	-0.699	SD of logged Data	0.0514

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.519	95% Adjusted-CLT UCL (Chen-1995)	0.512
		95% Modified-t UCL (Johnson-1978)	0.518

Nonparametric Distribution Free UCLs

95% CLT UCL	0.515	95% Jackknife UCL	0.519
95% Standard Bootstrap UCL	0.514	95% Bootstrap-t UCL	0.516
95% Hall's Bootstrap UCL	0.509	95% Percentile Bootstrap UCL	0.512
95% BCA Bootstrap UCL	0.511		
90% Chebyshev(Mean, Sd) UCL	0.529	95% Chebyshev(Mean, Sd) UCL	0.543
97.5% Chebyshev(Mean, Sd) UCL	0.562	99% Chebyshev(Mean, Sd) UCL	0.601

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.945	Mean	2.058
Maximum	2.135	Median	2.07
SD	0.0717	Std. Error of Mean	0.0293
Coefficient of Variation	0.0348	Skewness	-0.695
Mean of logged Data	0.721	SD of logged Data	0.0351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.116	95% Adjusted-CLT UCL (Chen-1995)	2.097
		95% Modified-t UCL (Johnson-1978)	2.115

Nonparametric Distribution Free UCLs

95% CLT UCL	2.106	95% Jackknife UCL	2.116
95% Standard Bootstrap UCL	2.101	95% Bootstrap-t UCL	2.106

95% Hall's Bootstrap UCL	2.1	95% Percentile Bootstrap UCL	2.099
95% BCA Bootstrap UCL	2.097		
90% Chebyshev(Mean, Sd) UCL	2.145	95% Chebyshev(Mean, Sd) UCL	2.185
97.5% Chebyshev(Mean, Sd) UCL	2.24	99% Chebyshev(Mean, Sd) UCL	2.349

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	3.579
Maximum	6.1	Median	3.088
SD	1.779	Std. Error of Mean	0.726
Coefficient of Variation	0.497	Skewness	0.504
Mean of logged Data	1.17	SD of logged Data	0.503

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.043	95% Adjusted-CLT UCL (Chen-1995)	4.934
		95% Modified-t UCL (Johnson-1978)	5.068

Nonparametric Distribution Free UCLs

95% CLT UCL	4.774	95% Jackknife UCL	5.043
95% Standard Bootstrap UCL	4.677	95% Bootstrap-t UCL	5.076
95% Hall's Bootstrap UCL	4.324	95% Percentile Bootstrap UCL	4.731
95% BCA Bootstrap UCL	4.751		
90% Chebyshev(Mean, Sd) UCL	5.758	95% Chebyshev(Mean, Sd) UCL	6.745
97.5% Chebyshev(Mean, Sd) UCL	8.115	99% Chebyshev(Mean, Sd) UCL	10.81

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1.41	Mean	4.553
Maximum	8.77	Median	3.965
SD	3.292	Std. Error of Mean	1.344
Coefficient of Variation	0.723	Skewness	0.264
Mean of logged Data	1.247	SD of logged Data	0.834

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.261	95% Adjusted-CLT UCL (Chen-1995)	6.919
		95% Modified-t UCL (Johnson-1978)	7.286

Nonparametric Distribution Free UCLs

95% CLT UCL	6.764	95% Jackknife UCL	7.261
95% Standard Bootstrap UCL	6.583	95% Bootstrap-t UCL	7.192
95% Hall's Bootstrap UCL	5.817	95% Percentile Bootstrap UCL	6.518
95% BCA Bootstrap UCL	6.68		
90% Chebyshev(Mean, Sd) UCL	8.585	95% Chebyshev(Mean, Sd) UCL	10.41
97.5% Chebyshev(Mean, Sd) UCL	12.95	99% Chebyshev(Mean, Sd) UCL	17.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	7.791
Maximum	13	Median	7.293
SD	5.085	Std. Error of Mean	2.076
Coefficient of Variation	0.653	Skewness	0.0545
Mean of logged Data	1.836	SD of logged Data	0.746

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.97	95% Adjusted-CLT UCL (Chen-1995)	11.26
		95% Modified-t UCL (Johnson-1978)	11.98

Nonparametric Distribution Free UCLs

95% CLT UCL	11.21	95% Jackknife UCL	11.97
95% Standard Bootstrap UCL	10.85	95% Bootstrap-t UCL	11.64
95% Hall's Bootstrap UCL	9.527	95% Percentile Bootstrap UCL	11.05

95% BCA Bootstrap UCL	10.8		
90% Chebyshev(Mean, Sd) UCL	14.02	95% Chebyshev(Mean, Sd) UCL	16.84
97.5% Chebyshev(Mean, Sd) UCL	20.76	99% Chebyshev(Mean, Sd) UCL	28.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	4.773
Maximum	6.6	Median	4.693
SD	1.751	Std. Error of Mean	0.715
Coefficient of Variation	0.367	Skewness	0.028
Mean of logged Data	1.504	SD of logged Data	0.381

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.213	95% Adjusted-CLT UCL (Chen-1995)	5.957
		95% Modified-t UCL (Johnson-1978)	6.214

Nonparametric Distribution Free UCLs

95% CLT UCL	5.948	95% Jackknife UCL	6.213
95% Standard Bootstrap UCL	5.846	95% Bootstrap-t UCL	6.349
95% Hall's Bootstrap UCL	5.366	95% Percentile Bootstrap UCL	5.861
95% BCA Bootstrap UCL	5.813		
90% Chebyshev(Mean, Sd) UCL	6.917	95% Chebyshev(Mean, Sd) UCL	7.888
97.5% Chebyshev(Mean, Sd) UCL	9.237	99% Chebyshev(Mean, Sd) UCL	11.89

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	3.443
Maximum	5.12	Median	3.263
SD	1.525	Std. Error of Mean	0.623
Coefficient of Variation	0.443	Skewness	0.0939

Mean of logged Data	1.148	SD of logged Data	0.465

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.697	95% Adjusted-CLT UCL (Chen-1995)	4.492
		95% Modified-t UCL (Johnson-1978)	4.701

Nonparametric Distribution Free UCLs

95% CLT UCL	4.467	95% Jackknife UCL	4.697
95% Standard Bootstrap UCL	4.391	95% Bootstrap-t UCL	5.011
95% Hall's Bootstrap UCL	3.975	95% Percentile Bootstrap UCL	4.441
95% BCA Bootstrap UCL	4.379		
90% Chebyshev(Mean, Sd) UCL	5.31	95% Chebyshev(Mean, Sd) UCL	6.156
97.5% Chebyshev(Mean, Sd) UCL	7.33	99% Chebyshev(Mean, Sd) UCL	9.637

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.92	Mean	5.319
Maximum	9.6	Median	4.825
SD	3.7	Std. Error of Mean	1.511
Coefficient of Variation	0.696	Skewness	0.117
Mean of logged Data	1.421	SD of logged Data	0.806

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.363	95% Adjusted-CLT UCL (Chen-1995)	7.881
		95% Modified-t UCL (Johnson-1978)	8.375

Nonparametric Distribution Free UCLs

95% CLT UCL	7.804	95% Jackknife UCL	8.363
95% Standard Bootstrap UCL	7.6	95% Bootstrap-t UCL	9.17
95% Hall's Bootstrap UCL	6.605	95% Percentile Bootstrap UCL	7.675
95% BCA Bootstrap UCL	7.675		
90% Chebyshev(Mean, Sd) UCL	9.851	95% Chebyshev(Mean, Sd) UCL	11.9
97.5% Chebyshev(Mean, Sd) UCL	14.75	99% Chebyshev(Mean, Sd) UCL	20.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.99	Mean	3.165
Maximum	3.285	Median	3.185
SD	0.111	Std. Error of Mean	0.0453
Coefficient of Variation	0.035	Skewness	-0.717
Mean of logged Data	1.152	SD of logged Data	0.0353

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.256	95% Adjusted-CLT UCL (Chen-1995)	3.225
		95% Modified-t UCL (Johnson-1978)	3.254

Nonparametric Distribution Free UCLs

95% CLT UCL	3.239	95% Jackknife UCL	3.256
95% Standard Bootstrap UCL	3.233	95% Bootstrap-t UCL	3.24
95% Hall's Bootstrap UCL	3.23	95% Percentile Bootstrap UCL	3.231
95% BCA Bootstrap UCL	3.221		
90% Chebyshev(Mean, Sd) UCL	3.301	95% Chebyshev(Mean, Sd) UCL	3.362
97.5% Chebyshev(Mean, Sd) UCL	3.448	99% Chebyshev(Mean, Sd) UCL	3.615

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	6.718
Maximum	13.8	Median	5.82
SD	5.057	Std. Error of Mean	2.065
Coefficient of Variation	0.753	Skewness	0.383
Mean of logged Data	1.615	SD of logged Data	0.866

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.88	95% Adjusted-CLT UCL (Chen-1995)	10.46
		95% Modified-t UCL (Johnson-1978)	10.93

Nonparametric Distribution Free UCLs

95% CLT UCL	10.11	95% Jackknife UCL	10.88
95% Standard Bootstrap UCL	9.766	95% Bootstrap-t UCL	12.67
95% Hall's Bootstrap UCL	8.899	95% Percentile Bootstrap UCL	9.753
95% BCA Bootstrap UCL	9.998		
90% Chebyshev(Mean, Sd) UCL	12.91	95% Chebyshev(Mean, Sd) UCL	15.72
97.5% Chebyshev(Mean, Sd) UCL	19.61	99% Chebyshev(Mean, Sd) UCL	27.26

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.195	Mean	1.262
Maximum	1.315	Median	1.26
SD	0.0449	Std. Error of Mean	0.0183
Coefficient of Variation	0.0356	Skewness	-0.276
Mean of logged Data	0.232	SD of logged Data	0.0357

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.299	95% Adjusted-CLT UCL (Chen-1995)	1.29
		95% Modified-t UCL (Johnson-1978)	1.298

Nonparametric Distribution Free UCLs

95% CLT UCL	1.292	95% Jackknife UCL	1.299
95% Standard Bootstrap UCL	1.289	95% Bootstrap-t UCL	1.299
95% Hall's Bootstrap UCL	1.295	95% Percentile Bootstrap UCL	1.288
95% BCA Bootstrap UCL	1.288		
90% Chebyshev(Mean, Sd) UCL	1.317	95% Chebyshev(Mean, Sd) UCL	1.342
97.5% Chebyshev(Mean, Sd) UCL	1.376	99% Chebyshev(Mean, Sd) UCL	1.444

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	5.213
Maximum	7.5	Median	5.133
SD	2.232	Std. Error of Mean	0.911
Coefficient of Variation	0.428	Skewness	0.0189
Mean of logged Data	1.568	SD of logged Data	0.452

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.048	95% Adjusted-CLT UCL (Chen-1995)	6.719
		95% Modified-t UCL (Johnson-1978)	7.05

Nonparametric Distribution Free UCLs

95% CLT UCL	6.711	95% Jackknife UCL	7.048
95% Standard Bootstrap UCL	6.587	95% Bootstrap-t UCL	7.042
95% Hall's Bootstrap UCL	5.948	95% Percentile Bootstrap UCL	6.609
95% BCA Bootstrap UCL	6.568		
90% Chebyshev(Mean, Sd) UCL	7.946	95% Chebyshev(Mean, Sd) UCL	9.184
97.5% Chebyshev(Mean, Sd) UCL	10.9	99% Chebyshev(Mean, Sd) UCL	14.28

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.925	Mean	1.425
Maximum	2.19	Median	1.368
SD	0.541	Std. Error of Mean	0.221
Coefficient of Variation	0.38	Skewness	0.376
Mean of logged Data	0.293	SD of logged Data	0.383

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.87	95% Adjusted-CLT UCL (Chen-1995)	1.825
		95% Modified-t UCL (Johnson-1978)	1.876

Nonparametric Distribution Free UCLs

95% CLT UCL	1.789	95% Jackknife UCL	1.87
95% Standard Bootstrap UCL	1.756	95% Bootstrap-t UCL	1.989
95% Hall's Bootstrap UCL	1.662	95% Percentile Bootstrap UCL	1.759
95% BCA Bootstrap UCL	1.763		
90% Chebyshev(Mean, Sd) UCL	2.088	95% Chebyshev(Mean, Sd) UCL	2.388
97.5% Chebyshev(Mean, Sd) UCL	2.805	99% Chebyshev(Mean, Sd) UCL	3.624

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	4.034
Maximum	5.67	Median	3.548
SD	1.117	Std. Error of Mean	0.456
Coefficient of Variation	0.277	Skewness	0.852
Mean of logged Data	1.365	SD of logged Data	0.264

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.953	95% Adjusted-CLT UCL (Chen-1995)	4.954
		95% Modified-t UCL (Johnson-1978)	4.98

Nonparametric Distribution Free UCLs

95% CLT UCL	4.784	95% Jackknife UCL	4.953
95% Standard Bootstrap UCL	4.71	95% Bootstrap-t UCL	7.096
95% Hall's Bootstrap UCL	6.268	95% Percentile Bootstrap UCL	4.76
95% BCA Bootstrap UCL	4.805		
90% Chebyshev(Mean, Sd) UCL	5.402	95% Chebyshev(Mean, Sd) UCL	6.022
97.5% Chebyshev(Mean, Sd) UCL	6.882	99% Chebyshev(Mean, Sd) UCL	8.572

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	6.279
Maximum	12.2	Median	5.393
SD	3.741	Std. Error of Mean	1.527
Coefficient of Variation	0.596	Skewness	0.745
Mean of logged Data	1.687	SD of logged Data	0.602

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.357	95% Adjusted-CLT UCL (Chen-1995)	9.288
		95% Modified-t UCL (Johnson-1978)	9.434

Nonparametric Distribution Free UCLs

95% CLT UCL	8.791	95% Jackknife UCL	9.357
95% Standard Bootstrap UCL	8.517	95% Bootstrap-t UCL	10.18
95% Hall's Bootstrap UCL	8.358	95% Percentile Bootstrap UCL	8.582
95% BCA Bootstrap UCL	8.641		
90% Chebyshev(Mean, Sd) UCL	10.86	95% Chebyshev(Mean, Sd) UCL	12.94
97.5% Chebyshev(Mean, Sd) UCL	15.82	99% Chebyshev(Mean, Sd) UCL	21.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:23:58 PM
From File	05263A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	15.1	Mean	16.18
Maximum	18.5	Median	15.75
SD	1.294	Std. Error of Mean	0.528
Coefficient of Variation	0.0799	Skewness	1.375
Mean of logged Data	2.781	SD of logged Data	0.0774

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.25	95% Adjusted-CLT UCL (Chen-1995)	17.37
		95% Modified-t UCL (Johnson-1978)	17.3

Nonparametric Distribution Free UCLs

95% CLT UCL	17.05	95% Jackknife UCL	17.25
95% Standard Bootstrap UCL	16.96	95% Bootstrap-t UCL	17.81
95% Hall's Bootstrap UCL	20.6	95% Percentile Bootstrap UCL	17.1
95% BCA Bootstrap UCL	17.22		
90% Chebyshev(Mean, Sd) UCL	17.77	95% Chebyshev(Mean, Sd) UCL	18.49
97.5% Chebyshev(Mean, Sd) UCL	19.48	99% Chebyshev(Mean, Sd) UCL	21.44

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.8	Mean	16.23
Maximum	20.6	Median	15.9
SD	3.083	Std. Error of Mean	1.259
Coefficient of Variation	0.19	Skewness	0.346
Mean of logged Data	2.772	SD of logged Data	0.189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.77	95% Adjusted-CLT UCL (Chen-1995)	18.49
		95% Modified-t UCL (Johnson-1978)	18.8

Nonparametric Distribution Free UCLs

95% CLT UCL	18.3	95% Jackknife UCL	18.77
95% Standard Bootstrap UCL	18.13	95% Bootstrap-t UCL	19.22
95% Hall's Bootstrap UCL	18.13	95% Percentile Bootstrap UCL	18.1
95% BCA Bootstrap UCL	18.37		
90% Chebyshev(Mean, Sd) UCL	20.01	95% Chebyshev(Mean, Sd) UCL	21.72
97.5% Chebyshev(Mean, Sd) UCL	24.09	99% Chebyshev(Mean, Sd) UCL	28.76

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	56.4	Mean	76.43
Maximum	96.3	Median	75.25
SD	18.58	Std. Error of Mean	7.585
Coefficient of Variation	0.243	Skewness	0.0551
Mean of logged Data	4.311	SD of logged Data	0.247

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	91.72	95% Adjusted-CLT UCL (Chen-1995)	89.09
		95% Modified-t UCL (Johnson-1978)	91.75

Nonparametric Distribution Free UCLs

95% CLT UCL	88.91	95% Jackknife UCL	91.72
95% Standard Bootstrap UCL	88.08	95% Bootstrap-t UCL	90.7
95% Hall's Bootstrap UCL	84.02	95% Percentile Bootstrap UCL	87.88
95% BCA Bootstrap UCL	87.65		
90% Chebyshev(Mean, Sd) UCL	99.19	95% Chebyshev(Mean, Sd) UCL	109.5
97.5% Chebyshev(Mean, Sd) UCL	123.8	99% Chebyshev(Mean, Sd) UCL	151.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.55	Mean	13.28
Maximum	38.9	Median	7.89
SD	12.58	Std. Error of Mean	5.136
Coefficient of Variation	0.947	Skewness	2.424
Mean of logged Data	2.355	SD of logged Data	0.648

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.63	95% Adjusted-CLT UCL (Chen-1995)	27.16
		95% Modified-t UCL (Johnson-1978)	24.48

Nonparametric Distribution Free UCLs

95% CLT UCL	21.73	95% Jackknife UCL	23.63
95% Standard Bootstrap UCL	21.2	95% Bootstrap-t UCL	411.7
95% Hall's Bootstrap UCL	156.8	95% Percentile Bootstrap UCL	23.32
95% BCA Bootstrap UCL	24.07		
90% Chebyshev(Mean, Sd) UCL	28.69	95% Chebyshev(Mean, Sd) UCL	35.67
97.5% Chebyshev(Mean, Sd) UCL	45.36	99% Chebyshev(Mean, Sd) UCL	64.38

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	35.67

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.525	Mean	2.441
Maximum	5.82	Median	2.078
SD	1.768	Std. Error of Mean	0.722
Coefficient of Variation	0.724	Skewness	1.702
Mean of logged Data	0.673	SD of logged Data	0.766

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.895	95% Adjusted-CLT UCL (Chen-1995)	4.164
		95% Modified-t UCL (Johnson-1978)	3.979

Nonparametric Distribution Free UCLs

95% CLT UCL	3.628	95% Jackknife UCL	3.895
95% Standard Bootstrap UCL	3.512	95% Bootstrap-t UCL	17.19
95% Hall's Bootstrap UCL	16.18	95% Percentile Bootstrap UCL	3.688
95% BCA Bootstrap UCL	3.938		
90% Chebyshev(Mean, Sd) UCL	4.606	95% Chebyshev(Mean, Sd) UCL	5.587
97.5% Chebyshev(Mean, Sd) UCL	6.949	99% Chebyshev(Mean, Sd) UCL	9.623

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.14	Mean	7.5
Maximum	11.9	Median	8.325
SD	3.292	Std. Error of Mean	1.344
Coefficient of Variation	0.439	Skewness	-0.608
Mean of logged Data	1.894	SD of logged Data	0.603

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.21	95% Adjusted-CLT UCL (Chen-1995)	9.354
		95% Modified-t UCL (Johnson-1978)	10.15

Nonparametric Distribution Free UCLs

95% CLT UCL	9.711	95% Jackknife UCL	10.21
95% Standard Bootstrap UCL	9.531	95% Bootstrap-t UCL	9.706
95% Hall's Bootstrap UCL	9.384	95% Percentile Bootstrap UCL	9.55
95% BCA Bootstrap UCL	9.127		
90% Chebyshev(Mean, Sd) UCL	11.53	95% Chebyshev(Mean, Sd) UCL	13.36
97.5% Chebyshev(Mean, Sd) UCL	15.89	99% Chebyshev(Mean, Sd) UCL	20.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.28	Mean	15.41
Maximum	41.2	Median	13.1
SD	13.4	Std. Error of Mean	5.471
Coefficient of Variation	0.87	Skewness	1.812
Mean of logged Data	2.414	SD of logged Data	0.94

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.43	95% Adjusted-CLT UCL (Chen-1995)	28.73
		95% Modified-t UCL (Johnson-1978)	27.1

Nonparametric Distribution Free UCLs

95% CLT UCL	24.4	95% Jackknife UCL	26.43
95% Standard Bootstrap UCL	23.77	95% Bootstrap-t UCL	36.64
95% Hall's Bootstrap UCL	69.98	95% Percentile Bootstrap UCL	25.45
95% BCA Bootstrap UCL	26.48		
90% Chebyshev(Mean, Sd) UCL	31.82	95% Chebyshev(Mean, Sd) UCL	39.25
97.5% Chebyshev(Mean, Sd) UCL	49.57	99% Chebyshev(Mean, Sd) UCL	69.84

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.69	Mean	14.39
Maximum	33.6	Median	13.5
SD	10.42	Std. Error of Mean	4.255
Coefficient of Variation	0.724	Skewness	1.398
Mean of logged Data	2.421	SD of logged Data	0.832

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.96	95% Adjusted-CLT UCL (Chen-1995)	23.98
		95% Modified-t UCL (Johnson-1978)	23.37

Nonparametric Distribution Free UCLs

95% CLT UCL	21.39	95% Jackknife UCL	22.96
95% Standard Bootstrap UCL	20.79	95% Bootstrap-t UCL	27.03
95% Hall's Bootstrap UCL	57.85	95% Percentile Bootstrap UCL	20.84
95% BCA Bootstrap UCL	22.96		
90% Chebyshev(Mean, Sd) UCL	27.15	95% Chebyshev(Mean, Sd) UCL	32.94
97.5% Chebyshev(Mean, Sd) UCL	40.96	99% Chebyshev(Mean, Sd) UCL	56.73

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.42	Mean	33.35
Maximum	55.6	Median	37.75
SD	20.32	Std. Error of Mean	8.297
Coefficient of Variation	0.609	Skewness	-0.479
Mean of logged Data	3.241	SD of logged Data	0.922

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	50.07	95% Adjusted-CLT UCL (Chen-1995)	45.27
		95% Modified-t UCL (Johnson-1978)	49.8

Nonparametric Distribution Free UCLs

95% CLT UCL	47	95% Jackknife UCL	50.07
95% Standard Bootstrap UCL	45.66	95% Bootstrap-t UCL	48.22
95% Hall's Bootstrap UCL	42.89	95% Percentile Bootstrap UCL	45.83
95% BCA Bootstrap UCL	44.27		
90% Chebyshev(Mean, Sd) UCL	58.24	95% Chebyshev(Mean, Sd) UCL	69.52
97.5% Chebyshev(Mean, Sd) UCL	85.17	99% Chebyshev(Mean, Sd) UCL	115.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.08	Mean	29.3
Maximum	56.1	Median	34.25
SD	18.74	Std. Error of Mean	7.649
Coefficient of Variation	0.64	Skewness	-0.12
Mean of logged Data	3.057	SD of logged Data	1.06

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.71	95% Adjusted-CLT UCL (Chen-1995)	41.48
		95% Modified-t UCL (Johnson-1978)	44.65

Nonparametric Distribution Free UCLs

95% CLT UCL	41.88	95% Jackknife UCL	44.71
95% Standard Bootstrap UCL	41.02	95% Bootstrap-t UCL	44.98
95% Hall's Bootstrap UCL	40.45	95% Percentile Bootstrap UCL	41.3
95% BCA Bootstrap UCL	41.03		
90% Chebyshev(Mean, Sd) UCL	52.24	95% Chebyshev(Mean, Sd) UCL	62.64
97.5% Chebyshev(Mean, Sd) UCL	77.06	99% Chebyshev(Mean, Sd) UCL	105.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	11.99
Maximum	22.5	Median	11.45
SD	6.904	Std. Error of Mean	2.818
Coefficient of Variation	0.576	Skewness	0.188
Mean of logged Data	2.27	SD of logged Data	0.827

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.67	95% Adjusted-CLT UCL (Chen-1995)	16.85
		95% Modified-t UCL (Johnson-1978)	17.7

Nonparametric Distribution Free UCLs

95% CLT UCL	16.62	95% Jackknife UCL	17.67
95% Standard Bootstrap UCL	16.04	95% Bootstrap-t UCL	18.44
95% Hall's Bootstrap UCL	20.27	95% Percentile Bootstrap UCL	16.23
95% BCA Bootstrap UCL	16.21		
90% Chebyshev(Mean, Sd) UCL	20.44	95% Chebyshev(Mean, Sd) UCL	24.27
97.5% Chebyshev(Mean, Sd) UCL	29.59	99% Chebyshev(Mean, Sd) UCL	40.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.08	Mean	29.87
Maximum	45.8	Median	38.15
SD	18.21	Std. Error of Mean	7.435
Coefficient of Variation	0.61	Skewness	-0.853
Mean of logged Data	3.107	SD of logged Data	0.967

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.85	95% Adjusted-CLT UCL (Chen-1995)	39.33
		95% Modified-t UCL (Johnson-1978)	44.42

Nonparametric Distribution Free UCLs

95% CLT UCL	42.1	95% Jackknife UCL	44.85
95% Standard Bootstrap UCL	40.85	95% Bootstrap-t UCL	41.67
95% Hall's Bootstrap UCL	37.3	95% Percentile Bootstrap UCL	41.6
95% BCA Bootstrap UCL	40.52		
90% Chebyshev(Mean, Sd) UCL	52.18	95% Chebyshev(Mean, Sd) UCL	62.28
97.5% Chebyshev(Mean, Sd) UCL	76.3	99% Chebyshev(Mean, Sd) UCL	103.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.29	Mean	11.3
Maximum	13.3	Median	12.8
SD	3.932	Std. Error of Mean	1.605
Coefficient of Variation	0.348	Skewness	-2.426
Mean of logged Data	2.329	SD of logged Data	0.558

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.53	95% Adjusted-CLT UCL (Chen-1995)	12.24
		95% Modified-t UCL (Johnson-1978)	14.27

Nonparametric Distribution Free UCLs

95% CLT UCL	13.94	95% Jackknife UCL	14.53
95% Standard Bootstrap UCL	13.66	95% Bootstrap-t UCL	13.65
95% Hall's Bootstrap UCL	12.83	95% Percentile Bootstrap UCL	13.02
95% BCA Bootstrap UCL	12.92		
90% Chebyshev(Mean, Sd) UCL	16.11	95% Chebyshev(Mean, Sd) UCL	18.29
97.5% Chebyshev(Mean, Sd) UCL	21.32	99% Chebyshev(Mean, Sd) UCL	27.27

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.29

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.34	Mean	33.05
Maximum	93.7	Median	29.9
SD	32.43	Std. Error of Mean	13.24
Coefficient of Variation	0.981	Skewness	1.576
Mean of logged Data	2.974	SD of logged Data	1.291

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.72	95% Adjusted-CLT UCL (Chen-1995)	63.92
		95% Modified-t UCL (Johnson-1978)	61.14

Nonparametric Distribution Free UCLs

95% CLT UCL	54.82	95% Jackknife UCL	59.72
95% Standard Bootstrap UCL	53.17	95% Bootstrap-t UCL	74.37
95% Hall's Bootstrap UCL	152.5	95% Percentile Bootstrap UCL	54.28
95% BCA Bootstrap UCL	59.28		
90% Chebyshev(Mean, Sd) UCL	72.76	95% Chebyshev(Mean, Sd) UCL	90.75
97.5% Chebyshev(Mean, Sd) UCL	115.7	99% Chebyshev(Mean, Sd) UCL	164.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.315	Mean	4.703
Maximum	6.15	Median	5.2
SD	1.705	Std. Error of Mean	0.696
Coefficient of Variation	0.363	Skewness	-2.137
Mean of logged Data	1.446	SD of logged Data	0.578

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.105	95% Adjusted-CLT UCL (Chen-1995)	5.199
		95% Modified-t UCL (Johnson-1978)	6.004

Nonparametric Distribution Free UCLs

95% CLT UCL	5.848	95% Jackknife UCL	6.105
95% Standard Bootstrap UCL	5.723	95% Bootstrap-t UCL	5.654
95% Hall's Bootstrap UCL	5.343	95% Percentile Bootstrap UCL	5.533
95% BCA Bootstrap UCL	5.392		
90% Chebyshev(Mean, Sd) UCL	6.791	95% Chebyshev(Mean, Sd) UCL	7.737
97.5% Chebyshev(Mean, Sd) UCL	9.051	99% Chebyshev(Mean, Sd) UCL	11.63

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.737

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.68	Mean	18.5
Maximum	29.3	Median	19.45
SD	9.727	Std. Error of Mean	3.971
Coefficient of Variation	0.526	Skewness	-0.725
Mean of logged Data	2.694	SD of logged Data	0.885

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.5	95% Adjusted-CLT UCL (Chen-1995)	23.77
		95% Modified-t UCL (Johnson-1978)	26.3

Nonparametric Distribution Free UCLs

95% CLT UCL	25.03	95% Jackknife UCL	26.5
95% Standard Bootstrap UCL	24.59	95% Bootstrap-t UCL	25.19
95% Hall's Bootstrap UCL	24.77	95% Percentile Bootstrap UCL	23.97
95% BCA Bootstrap UCL	23.76		
90% Chebyshev(Mean, Sd) UCL	30.41	95% Chebyshev(Mean, Sd) UCL	35.81
97.5% Chebyshev(Mean, Sd) UCL	43.3	99% Chebyshev(Mean, Sd) UCL	58.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.71	Mean	5.803
Maximum	7.8	Median	5.735

SD	1.522	Std. Error of Mean	0.621
Coefficient of Variation	0.262	Skewness	-0.0399
Mean of logged Data	1.728	SD of logged Data	0.274

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.055	95% Adjusted-CLT UCL (Chen-1995)	6.814
		95% Modified-t UCL (Johnson-1978)	7.053

Nonparametric Distribution Free UCLs

95% CLT UCL	6.825	95% Jackknife UCL	7.055
95% Standard Bootstrap UCL	6.736	95% Bootstrap-t UCL	7.177
95% Hall's Bootstrap UCL	6.77	95% Percentile Bootstrap UCL	6.738
95% BCA Bootstrap UCL	6.733		
90% Chebyshev(Mean, Sd) UCL	7.667	95% Chebyshev(Mean, Sd) UCL	8.511
97.5% Chebyshev(Mean, Sd) UCL	9.682	99% Chebyshev(Mean, Sd) UCL	11.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.17	Mean	20.33
Maximum	65.7	Median	13.5
SD	22.7	Std. Error of Mean	9.266
Coefficient of Variation	1.117	Skewness	2.209
Mean of logged Data	2.562	SD of logged Data	1.081

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39	95% Adjusted-CLT UCL (Chen-1995)	44.5
		95% Modified-t UCL (Johnson-1978)	40.39

Nonparametric Distribution Free UCLs

95% CLT UCL	35.57	95% Jackknife UCL	39
95% Standard Bootstrap UCL	34.38	95% Bootstrap-t UCL	218.1

95% Hall's Bootstrap UCL	171.8	95% Percentile Bootstrap UCL	37.88
95% BCA Bootstrap UCL	39.77		
90% Chebyshev(Mean, Sd) UCL	48.13	95% Chebyshev(Mean, Sd) UCL	60.72
97.5% Chebyshev(Mean, Sd) UCL	78.19	99% Chebyshev(Mean, Sd) UCL	112.5

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.29	Mean	30.25
Maximum	77.9	Median	27.2
SD	25.78	Std. Error of Mean	10.53
Coefficient of Variation	0.852	Skewness	1.46
Mean of logged Data	3.035	SD of logged Data	1.07

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.46	95% Adjusted-CLT UCL (Chen-1995)	54.27
		95% Modified-t UCL (Johnson-1978)	52.5

Nonparametric Distribution Free UCLs

95% CLT UCL	47.56	95% Jackknife UCL	51.46
95% Standard Bootstrap UCL	45.82	95% Bootstrap-t UCL	61.25
95% Hall's Bootstrap UCL	133	95% Percentile Bootstrap UCL	47.15
95% BCA Bootstrap UCL	52.35		
90% Chebyshev(Mean, Sd) UCL	61.82	95% Chebyshev(Mean, Sd) UCL	76.13
97.5% Chebyshev(Mean, Sd) UCL	95.98	99% Chebyshev(Mean, Sd) UCL	135

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:25:10 PM
From File	05265.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.3	Mean	17.3
Maximum	18.9	Median	17.5
SD	1.54	Std. Error of Mean	0.629
Coefficient of Variation	0.089	Skewness	-0.284
Mean of logged Data	2.847	SD of logged Data	0.0901

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.57	95% Adjusted-CLT UCL (Chen-1995)	18.26
		95% Modified-t UCL (Johnson-1978)	18.55

Nonparametric Distribution Free UCLs

95% CLT UCL	18.33	95% Jackknife UCL	18.57
95% Standard Bootstrap UCL	18.27	95% Bootstrap-t UCL	18.59
95% Hall's Bootstrap UCL	17.96	95% Percentile Bootstrap UCL	18.23
95% BCA Bootstrap UCL	18.23		
90% Chebyshev(Mean, Sd) UCL	19.19	95% Chebyshev(Mean, Sd) UCL	20.04
97.5% Chebyshev(Mean, Sd) UCL	21.23	99% Chebyshev(Mean, Sd) UCL	23.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.6	Mean	24.03
Maximum	29.1	Median	24.2
SD	4.258	Std. Error of Mean	1.739
Coefficient of Variation	0.177	Skewness	-0.101

Mean of logged Data	3.166	SD of logged Data	0.181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.54	95% Adjusted-CLT UCL (Chen-1995)	26.82
		95% Modified-t UCL (Johnson-1978)	27.52

Nonparametric Distribution Free UCLs

95% CLT UCL	26.89	95% Jackknife UCL	27.54
95% Standard Bootstrap UCL	26.59	95% Bootstrap-t UCL	27.56
95% Hall's Bootstrap UCL	26.39	95% Percentile Bootstrap UCL	26.75
95% BCA Bootstrap UCL	26.62		
90% Chebyshev(Mean, Sd) UCL	29.25	95% Chebyshev(Mean, Sd) UCL	31.61
97.5% Chebyshev(Mean, Sd) UCL	34.89	99% Chebyshev(Mean, Sd) UCL	41.33

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	61.2	Mean	88.93
Maximum	113	Median	90.9
SD	21.99	Std. Error of Mean	8.979
Coefficient of Variation	0.247	Skewness	-0.176
Mean of logged Data	4.461	SD of logged Data	0.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	107	95% Adjusted-CLT UCL (Chen-1995)	103
		95% Modified-t UCL (Johnson-1978)	106.9

Nonparametric Distribution Free UCLs

95% CLT UCL	103.7	95% Jackknife UCL	107
95% Standard Bootstrap UCL	102.1	95% Bootstrap-t UCL	106.9
95% Hall's Bootstrap UCL	99.49	95% Percentile Bootstrap UCL	102.4
95% BCA Bootstrap UCL	101.9		

90% Chebyshev(Mean, Sd) UCL	115.9	95% Chebyshev(Mean, Sd) UCL	128.1
97.5% Chebyshev(Mean, Sd) UCL	145	99% Chebyshev(Mean, Sd) UCL	178.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.78	Mean	18.74
Maximum	39.4	Median	12.25
SD	16.75	Std. Error of Mean	6.84
Coefficient of Variation	0.894	Skewness	0.572
Mean of logged Data	2.513	SD of logged Data	1.041

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.52	95% Adjusted-CLT UCL (Chen-1995)	31.7
		95% Modified-t UCL (Johnson-1978)	32.79

Nonparametric Distribution Free UCLs

95% CLT UCL	29.99	95% Jackknife UCL	32.52
95% Standard Bootstrap UCL	28.96	95% Bootstrap-t UCL	38.68
95% Hall's Bootstrap UCL	34.45	95% Percentile Bootstrap UCL	29.35
95% BCA Bootstrap UCL	30.14		
90% Chebyshev(Mean, Sd) UCL	39.26	95% Chebyshev(Mean, Sd) UCL	48.55
97.5% Chebyshev(Mean, Sd) UCL	61.45	99% Chebyshev(Mean, Sd) UCL	86.79

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.319	Mean	3.457
Maximum	14.3	Median	1.77

SD	5.366	Std. Error of Mean	2.191
Coefficient of Variation	1.552	Skewness	2.339
Mean of logged Data	0.441	SD of logged Data	1.339

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.872	95% Adjusted-CLT UCL (Chen-1995)	9.296
		95% Modified-t UCL (Johnson-1978)	8.22

Nonparametric Distribution Free UCLs

95% CLT UCL	7.061	95% Jackknife UCL	7.872
95% Standard Bootstrap UCL	6.697	95% Bootstrap-t UCL	22.49
95% Hall's Bootstrap UCL	28.84	95% Percentile Bootstrap UCL	7.629
95% BCA Bootstrap UCL	8.085		
90% Chebyshev(Mean, Sd) UCL	10.03	95% Chebyshev(Mean, Sd) UCL	13.01
97.5% Chebyshev(Mean, Sd) UCL	17.14	99% Chebyshev(Mean, Sd) UCL	25.25

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.15	Mean	13.04
Maximum	48.5	Median	8.425
SD	17.65	Std. Error of Mean	7.204
Coefficient of Variation	1.354	Skewness	2.279
Mean of logged Data	1.971	SD of logged Data	1.151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.55	95% Adjusted-CLT UCL (Chen-1995)	32.05
		95% Modified-t UCL (Johnson-1978)	28.67

Nonparametric Distribution Free UCLs

95% CLT UCL	24.89	95% Jackknife UCL	27.55
95% Standard Bootstrap UCL	24.04	95% Bootstrap-t UCL	60.72
95% Hall's Bootstrap UCL	97.51	95% Percentile Bootstrap UCL	27.41
95% BCA Bootstrap UCL	28.5		
90% Chebyshev(Mean, Sd) UCL	34.65	95% Chebyshev(Mean, Sd) UCL	44.44

97.5% Chebyshev(Mean, Sd) UCL	58.03	99% Chebyshev(Mean, Sd) UCL	84.72

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.12	Mean	44.2
Maximum	205	Median	14
SD	78.94	Std. Error of Mean	32.23
Coefficient of Variation	1.786	Skewness	2.427
Mean of logged Data	2.874	SD of logged Data	1.291

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	109.1	95% Adjusted-CLT UCL (Chen-1995)	131.3
		95% Modified-t UCL (Johnson-1978)	114.5

Nonparametric Distribution Free UCLs

95% CLT UCL	97.21	95% Jackknife UCL	109.1
95% Standard Bootstrap UCL	93.33	95% Bootstrap-t UCL	781.3
95% Hall's Bootstrap UCL	564.8	95% Percentile Bootstrap UCL	107.9
95% BCA Bootstrap UCL	111.4		
90% Chebyshev(Mean, Sd) UCL	140.9	95% Chebyshev(Mean, Sd) UCL	184.7
97.5% Chebyshev(Mean, Sd) UCL	245.5	99% Chebyshev(Mean, Sd) UCL	364.8

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.3	Mean	46.73
Maximum	206	Median	17.45
SD	78.25	Std. Error of Mean	31.94
Coefficient of Variation	1.674	Skewness	2.418
Mean of logged Data	3.058	SD of logged Data	1.204

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	111.1	95% Adjusted-CLT UCL (Chen-1995)	133
		95% Modified-t UCL (Johnson-1978)	116.4

Nonparametric Distribution Free UCLs

95% CLT UCL	99.28	95% Jackknife UCL	111.1
95% Standard Bootstrap UCL	94.04	95% Bootstrap-t UCL	638.4
95% Hall's Bootstrap UCL	534.1	95% Percentile Bootstrap UCL	108.9
95% BCA Bootstrap UCL	113.1		
90% Chebyshev(Mean, Sd) UCL	142.6	95% Chebyshev(Mean, Sd) UCL	186
97.5% Chebyshev(Mean, Sd) UCL	246.2	99% Chebyshev(Mean, Sd) UCL	364.6

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.1	Mean	68.08
Maximum	289	Median	27.45
SD	108.7	Std. Error of Mean	44.36
Coefficient of Variation	1.596	Skewness	2.406
Mean of logged Data	3.507	SD of logged Data	1.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	157.5	95% Adjusted-CLT UCL (Chen-1995)	187.6
		95% Modified-t UCL (Johnson-1978)	164.7

Nonparametric Distribution Free UCLs

95% CLT UCL	141	95% Jackknife UCL	157.5
95% Standard Bootstrap UCL	136.6	95% Bootstrap-t UCL	761.4
95% Hall's Bootstrap UCL	660	95% Percentile Bootstrap UCL	154.4
95% BCA Bootstrap UCL	161.6		
90% Chebyshev(Mean, Sd) UCL	201.2	95% Chebyshev(Mean, Sd) UCL	261.4
97.5% Chebyshev(Mean, Sd) UCL	345.1	99% Chebyshev(Mean, Sd) UCL	509.5

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.29	Mean	41.7
Maximum	173	Median	18.1
SD	64.63	Std. Error of Mean	26.38
Coefficient of Variation	1.55	Skewness	2.398
Mean of logged Data	3.055	SD of logged Data	1.134

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	94.86	95% Adjusted-CLT UCL (Chen-1995)	112.7
		95% Modified-t UCL (Johnson-1978)	99.17

Nonparametric Distribution Free UCLs

95% CLT UCL	85.1	95% Jackknife UCL	94.86
95% Standard Bootstrap UCL	80.27	95% Bootstrap-t UCL	406.9
95% Hall's Bootstrap UCL	404.8	95% Percentile Bootstrap UCL	92.9
95% BCA Bootstrap UCL	96.53		
90% Chebyshev(Mean, Sd) UCL	120.9	95% Chebyshev(Mean, Sd) UCL	156.7
97.5% Chebyshev(Mean, Sd) UCL	206.5	99% Chebyshev(Mean, Sd) UCL	304.2

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.84	Mean	26.46
Maximum	115	Median	10.11
SD	43.49	Std. Error of Mean	17.76
Coefficient of Variation	1.644	Skewness	2.421
Mean of logged Data	2.531	SD of logged Data	1.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.23	95% Adjusted-CLT UCL (Chen-1995)	74.41
		95% Modified-t UCL (Johnson-1978)	65.16

Nonparametric Distribution Free UCLs

95% CLT UCL	55.66	95% Jackknife UCL	62.23
95% Standard Bootstrap UCL	52.95	95% Bootstrap-t UCL	371.9
95% Hall's Bootstrap UCL	300	95% Percentile Bootstrap UCL	61.21
95% BCA Bootstrap UCL	62.41		
90% Chebyshev(Mean, Sd) UCL	79.72	95% Chebyshev(Mean, Sd) UCL	103.8
97.5% Chebyshev(Mean, Sd) UCL	137.3	99% Chebyshev(Mean, Sd) UCL	203.1

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.41	Mean	60.62
Maximum	260	Median	24.1
SD	98.12	Std. Error of Mean	40.06
Coefficient of Variation	1.619	Skewness	2.4
Mean of logged Data	3.354	SD of logged Data	1.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	141.3	95% Adjusted-CLT UCL (Chen-1995)	168.4
		95% Modified-t UCL (Johnson-1978)	147.9

Nonparametric Distribution Free UCLs

95% CLT UCL	126.5	95% Jackknife UCL	141.3
95% Standard Bootstrap UCL	120.6	95% Bootstrap-t UCL	660
95% Hall's Bootstrap UCL	557.3	95% Percentile Bootstrap UCL	138.6
95% BCA Bootstrap UCL	143.6		
90% Chebyshev(Mean, Sd) UCL	180.8	95% Chebyshev(Mean, Sd) UCL	235.2
97.5% Chebyshev(Mean, Sd) UCL	310.8	99% Chebyshev(Mean, Sd) UCL	459.2

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.31	Mean	15.72
Maximum	48.6	Median	12.98
SD	16.8	Std. Error of Mean	6.857
Coefficient of Variation	1.068	Skewness	2.005
Mean of logged Data	2.331	SD of logged Data	1.014

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.54	95% Adjusted-CLT UCL (Chen-1995)	33
		95% Modified-t UCL (Johnson-1978)	30.47

Nonparametric Distribution Free UCLs

95% CLT UCL	27	95% Jackknife UCL	29.54
95% Standard Bootstrap UCL	26.1	95% Bootstrap-t UCL	46.55
95% Hall's Bootstrap UCL	80.45	95% Percentile Bootstrap UCL	27.58
95% BCA Bootstrap UCL	30.83		
90% Chebyshev(Mean, Sd) UCL	36.29	95% Chebyshev(Mean, Sd) UCL	45.61
97.5% Chebyshev(Mean, Sd) UCL	58.54	99% Chebyshev(Mean, Sd) UCL	83.95

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.06	Mean	69.14
Maximum	343	Median	13.35
SD	134.4	Std. Error of Mean	54.86
Coefficient of Variation	1.943	Skewness	2.433
Mean of logged Data	3.089	SD of logged Data	1.436

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	179.7	95% Adjusted-CLT UCL (Chen-1995)	217.6
		95% Modified-t UCL (Johnson-1978)	188.8

Nonparametric Distribution Free UCLs

95% CLT UCL	159.4	95% Jackknife UCL	179.7
95% Standard Bootstrap UCL	151.1	95% Bootstrap-t UCL	2490
95% Hall's Bootstrap UCL	1447	95% Percentile Bootstrap UCL	176.3
95% BCA Bootstrap UCL	182.9		
90% Chebyshev(Mean, Sd) UCL	233.7	95% Chebyshev(Mean, Sd) UCL	308.3
97.5% Chebyshev(Mean, Sd) UCL	411.7	99% Chebyshev(Mean, Sd) UCL	615

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.11	Mean	5.643
Maximum	17.1	Median	4.385
SD	5.852	Std. Error of Mean	2.389
Coefficient of Variation	1.037	Skewness	2.012
Mean of logged Data	1.345	SD of logged Data	0.955

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.46	95% Adjusted-CLT UCL (Chen-1995)	11.67
		95% Modified-t UCL (Johnson-1978)	10.78

Nonparametric Distribution Free UCLs

95% CLT UCL	9.573	95% Jackknife UCL	10.46
95% Standard Bootstrap UCL	9.202	95% Bootstrap-t UCL	16.26
95% Hall's Bootstrap UCL	27.05	95% Percentile Bootstrap UCL	9.852
95% BCA Bootstrap UCL	10.53		
90% Chebyshev(Mean, Sd) UCL	12.81	95% Chebyshev(Mean, Sd) UCL	16.06
97.5% Chebyshev(Mean, Sd) UCL	20.56	99% Chebyshev(Mean, Sd) UCL	29.41

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.11	Mean	38.35
Maximum	162	Median	15.3
SD	60.81	Std. Error of Mean	24.83
Coefficient of Variation	1.586	Skewness	2.407
Mean of logged Data	2.95	SD of logged Data	1.135

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	88.37	95% Adjusted-CLT UCL (Chen-1995)	105.3
		95% Modified-t UCL (Johnson-1978)	92.44

Nonparametric Distribution Free UCLs

95% CLT UCL	79.18	95% Jackknife UCL	88.37
95% Standard Bootstrap UCL	75.61	95% Bootstrap-t UCL	451.2
95% Hall's Bootstrap UCL	361	95% Percentile Bootstrap UCL	86.64
95% BCA Bootstrap UCL	90.92		
90% Chebyshev(Mean, Sd) UCL	112.8	95% Chebyshev(Mean, Sd) UCL	146.6
97.5% Chebyshev(Mean, Sd) UCL	193.4	99% Chebyshev(Mean, Sd) UCL	285.4

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.08	Mean	6.582
Maximum	8.73	Median	5.955
SD	1.519	Std. Error of Mean	0.62
Coefficient of Variation	0.231	Skewness	0.805
Mean of logged Data	1.863	SD of logged Data	0.222

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.831	95% Adjusted-CLT UCL (Chen-1995)	7.819
		95% Modified-t UCL (Johnson-1978)	7.865

Nonparametric Distribution Free UCLs

95% CLT UCL	7.601	95% Jackknife UCL	7.831
95% Standard Bootstrap UCL	7.5	95% Bootstrap-t UCL	10.55
95% Hall's Bootstrap UCL	19.32	95% Percentile Bootstrap UCL	7.587
95% BCA Bootstrap UCL	7.642		
90% Chebyshev(Mean, Sd) UCL	8.441	95% Chebyshev(Mean, Sd) UCL	9.284
97.5% Chebyshev(Mean, Sd) UCL	10.45	99% Chebyshev(Mean, Sd) UCL	12.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.81	Mean	49.8
Maximum	256	Median	9.37
SD	101.1	Std. Error of Mean	41.27
Coefficient of Variation	2.03	Skewness	2.441
Mean of logged Data	2.614	SD of logged Data	1.52

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	133	95% Adjusted-CLT UCL (Chen-1995)	161.6
		95% Modified-t UCL (Johnson-1978)	139.8

Nonparametric Distribution Free UCLs

95% CLT UCL	117.7	95% Jackknife UCL	133
95% Standard Bootstrap UCL	111.7	95% Bootstrap-t UCL	1729
95% Hall's Bootstrap UCL	897.6	95% Percentile Bootstrap UCL	130.9
95% BCA Bootstrap UCL	172.3		
90% Chebyshev(Mean, Sd) UCL	173.6	95% Chebyshev(Mean, Sd) UCL	229.7
97.5% Chebyshev(Mean, Sd) UCL	307.6	99% Chebyshev(Mean, Sd) UCL	460.5

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	5.56	Mean	57.21
Maximum	276	Median	13.6
SD	107.4	Std. Error of Mean	43.83
Coefficient of Variation	1.877	Skewness	2.431
Mean of logged Data	3.008	SD of logged Data	1.369

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	145.5	95% Adjusted-CLT UCL (Chen-1995)	175.8
		95% Modified-t UCL (Johnson-1978)	152.8

Nonparametric Distribution Free UCLs

95% CLT UCL	129.3	95% Jackknife UCL	145.5
95% Standard Bootstrap UCL	123.2	95% Bootstrap-t UCL	1432
95% Hall's Bootstrap UCL	905.8	95% Percentile Bootstrap UCL	143.4
95% BCA Bootstrap UCL	148.7		
90% Chebyshev(Mean, Sd) UCL	188.7	95% Chebyshev(Mean, Sd) UCL	248.3
97.5% Chebyshev(Mean, Sd) UCL	331	99% Chebyshev(Mean, Sd) UCL	493.4

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:26:11 PM
From File	05267.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.9	Mean	14.48
Maximum	16.4	Median	14.4
SD	1.258	Std. Error of Mean	0.513
Coefficient of Variation	0.0868	Skewness	0.399
Mean of logged Data	2.67	SD of logged Data	0.0862

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.52	95% Adjusted-CLT UCL (Chen-1995)	15.42
		95% Modified-t UCL (Johnson-1978)	15.53

Nonparametric Distribution Free UCLs

95% CLT UCL	15.33	95% Jackknife UCL	15.52
95% Standard Bootstrap UCL	15.27	95% Bootstrap-t UCL	15.76
95% Hall's Bootstrap UCL	15.43	95% Percentile Bootstrap UCL	15.27
95% BCA Bootstrap UCL	15.32		
90% Chebyshev(Mean, Sd) UCL	16.02	95% Chebyshev(Mean, Sd) UCL	16.72
97.5% Chebyshev(Mean, Sd) UCL	17.69	99% Chebyshev(Mean, Sd) UCL	19.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	30	Mean	50.65
Maximum	94.9	Median	44.55
SD	22.5	Std. Error of Mean	9.186
Coefficient of Variation	0.444	Skewness	2.024
Mean of logged Data	3.859	SD of logged Data	0.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	69.16	95% Adjusted-CLT UCL (Chen-1995)	73.87
		95% Modified-t UCL (Johnson-1978)	70.43

Nonparametric Distribution Free UCLs

95% CLT UCL	65.76	95% Jackknife UCL	69.16
95% Standard Bootstrap UCL	64.12	95% Bootstrap-t UCL	140.2
95% Hall's Bootstrap UCL	147.7	95% Percentile Bootstrap UCL	67.1
95% BCA Bootstrap UCL	70		
90% Chebyshev(Mean, Sd) UCL	78.21	95% Chebyshev(Mean, Sd) UCL	90.69
97.5% Chebyshev(Mean, Sd) UCL	108	99% Chebyshev(Mean, Sd) UCL	142.1

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	47.4	Mean	68
Maximum	87.6	Median	68
SD	18.78	Std. Error of Mean	7.667
Coefficient of Variation	0.276	Skewness	-0.0175
Mean of logged Data	4.186	SD of logged Data	0.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	83.45	95% Adjusted-CLT UCL (Chen-1995)	80.55
		95% Modified-t UCL (Johnson-1978)	83.44

Nonparametric Distribution Free UCLs

95% CLT UCL	80.61	95% Jackknife UCL	83.45
95% Standard Bootstrap UCL	79.57	95% Bootstrap-t UCL	83.35
95% Hall's Bootstrap UCL	74.78	95% Percentile Bootstrap UCL	79.58
95% BCA Bootstrap UCL	79.58		
90% Chebyshev(Mean, Sd) UCL	91	95% Chebyshev(Mean, Sd) UCL	101.4
97.5% Chebyshev(Mean, Sd) UCL	115.9	99% Chebyshev(Mean, Sd) UCL	144.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.677	Mean	1.554
Maximum	2.68	Median	1.405
SD	0.843	Std. Error of Mean	0.344
Coefficient of Variation	0.542	Skewness	0.404
Mean of logged Data	0.307	SD of logged Data	0.579

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.248	95% Adjusted-CLT UCL (Chen-1995)	2.181
		95% Modified-t UCL (Johnson-1978)	2.257

Nonparametric Distribution Free UCLs

95% CLT UCL	2.121	95% Jackknife UCL	2.248
95% Standard Bootstrap UCL	2.075	95% Bootstrap-t UCL	2.421
95% Hall's Bootstrap UCL	2.321	95% Percentile Bootstrap UCL	2.092
95% BCA Bootstrap UCL	2.06		
90% Chebyshev(Mean, Sd) UCL	2.587	95% Chebyshev(Mean, Sd) UCL	3.055
97.5% Chebyshev(Mean, Sd) UCL	3.704	99% Chebyshev(Mean, Sd) UCL	4.979

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.371	Mean	0.992
Maximum	2.08	Median	0.568
SD	0.808	Std. Error of Mean	0.33
Coefficient of Variation	0.814	Skewness	0.874
Mean of logged Data	-0.284	SD of logged Data	0.802

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.656	95% Adjusted-CLT UCL (Chen-1995)	1.66
		95% Modified-t UCL (Johnson-1978)	1.676

Nonparametric Distribution Free UCLs

95% CLT UCL	1.534	95% Jackknife UCL	1.656
95% Standard Bootstrap UCL	1.486	95% Bootstrap-t UCL	3.269
95% Hall's Bootstrap UCL	6.641	95% Percentile Bootstrap UCL	1.502
95% BCA Bootstrap UCL	1.57		
90% Chebyshev(Mean, Sd) UCL	1.981	95% Chebyshev(Mean, Sd) UCL	2.429
97.5% Chebyshev(Mean, Sd) UCL	3.051	99% Chebyshev(Mean, Sd) UCL	4.273

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.925	Mean	3.943
Maximum	7.95	Median	3.36
SD	2.278	Std. Error of Mean	0.93
Coefficient of Variation	0.578	Skewness	1.254
Mean of logged Data	1.244	SD of logged Data	0.546

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.818	95% Adjusted-CLT UCL (Chen-1995)	5.982
		95% Modified-t UCL (Johnson-1978)	5.897

Nonparametric Distribution Free UCLs

95% CLT UCL	5.473	95% Jackknife UCL	5.818
95% Standard Bootstrap UCL	5.341	95% Bootstrap-t UCL	7.027
95% Hall's Bootstrap UCL	13.35	95% Percentile Bootstrap UCL	5.473
95% BCA Bootstrap UCL	5.647		
90% Chebyshev(Mean, Sd) UCL	6.734	95% Chebyshev(Mean, Sd) UCL	7.998
97.5% Chebyshev(Mean, Sd) UCL	9.752	99% Chebyshev(Mean, Sd) UCL	13.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.92	Mean	17.75
Maximum	33.8	Median	18.5
SD	9.564	Std. Error of Mean	3.904
Coefficient of Variation	0.539	Skewness	0.709
Mean of logged Data	2.739	SD of logged Data	0.603

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.62	95% Adjusted-CLT UCL (Chen-1995)	25.38
		95% Modified-t UCL (Johnson-1978)	25.81

Nonparametric Distribution Free UCLs

95% CLT UCL	24.18	95% Jackknife UCL	25.62
95% Standard Bootstrap UCL	23.64	95% Bootstrap-t UCL	27.52
95% Hall's Bootstrap UCL	28.03	95% Percentile Bootstrap UCL	23.93
95% BCA Bootstrap UCL	24.98		
90% Chebyshev(Mean, Sd) UCL	29.47	95% Chebyshev(Mean, Sd) UCL	34.77
97.5% Chebyshev(Mean, Sd) UCL	42.14	99% Chebyshev(Mean, Sd) UCL	56.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.99	Mean	24.88
Maximum	49.2	Median	23.75
SD	13.74	Std. Error of Mean	5.608
Coefficient of Variation	0.552	Skewness	1.115
Mean of logged Data	3.085	SD of logged Data	0.571

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.18	95% Adjusted-CLT UCL (Chen-1995)	36.83
		95% Modified-t UCL (Johnson-1978)	36.61

Nonparametric Distribution Free UCLs

95% CLT UCL	34.11	95% Jackknife UCL	36.18
95% Standard Bootstrap UCL	33.12	95% Bootstrap-t UCL	40.46
95% Hall's Bootstrap UCL	83.09	95% Percentile Bootstrap UCL	33.87
95% BCA Bootstrap UCL	36.17		
90% Chebyshev(Mean, Sd) UCL	41.71	95% Chebyshev(Mean, Sd) UCL	49.33
97.5% Chebyshev(Mean, Sd) UCL	59.9	99% Chebyshev(Mean, Sd) UCL	80.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.3	Mean	34.83
Maximum	62.4	Median	34.8
SD	17.12	Std. Error of Mean	6.99
Coefficient of Variation	0.492	Skewness	0.548
Mean of logged Data	3.438	SD of logged Data	0.54

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.92	95% Adjusted-CLT UCL (Chen-1995)	48
		95% Modified-t UCL (Johnson-1978)	49.18

Nonparametric Distribution Free UCLs

95% CLT UCL	46.33	95% Jackknife UCL	48.92
95% Standard Bootstrap UCL	45.32	95% Bootstrap-t UCL	51.97
95% Hall's Bootstrap UCL	50.55	95% Percentile Bootstrap UCL	45.3
95% BCA Bootstrap UCL	46.97		
90% Chebyshev(Mean, Sd) UCL	55.8	95% Chebyshev(Mean, Sd) UCL	65.3
97.5% Chebyshev(Mean, Sd) UCL	78.49	99% Chebyshev(Mean, Sd) UCL	104.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.56	Mean	19.19
Maximum	37.7	Median	18.4
SD	10.84	Std. Error of Mean	4.427
Coefficient of Variation	0.565	Skewness	0.921
Mean of logged Data	2.813	SD of logged Data	0.602

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.11	95% Adjusted-CLT UCL (Chen-1995)	28.25
		95% Modified-t UCL (Johnson-1978)	28.39

Nonparametric Distribution Free UCLs

95% CLT UCL	26.48	95% Jackknife UCL	28.11
95% Standard Bootstrap UCL	25.85	95% Bootstrap-t UCL	31.79
95% Hall's Bootstrap UCL	32.75	95% Percentile Bootstrap UCL	26.1
95% BCA Bootstrap UCL	27.31		
90% Chebyshev(Mean, Sd) UCL	32.48	95% Chebyshev(Mean, Sd) UCL	38.49
97.5% Chebyshev(Mean, Sd) UCL	46.84	99% Chebyshev(Mean, Sd) UCL	63.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.09	Mean	12.26
Maximum	22.8	Median	11.45
SD	6.002	Std. Error of Mean	2.45
Coefficient of Variation	0.49	Skewness	1.056
Mean of logged Data	2.406	SD of logged Data	0.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.2	95% Adjusted-CLT UCL (Chen-1995)	17.42

		95% Modified-t UCL (Johnson-1978)	17.37

Nonparametric Distribution Free UCLs

95% CLT UCL	16.29	95% Jackknife UCL	17.2
95% Standard Bootstrap UCL	15.92	95% Bootstrap-t UCL	19.06
95% Hall's Bootstrap UCL	43.43	95% Percentile Bootstrap UCL	16.13
95% BCA Bootstrap UCL	17.12		
90% Chebyshev(Mean, Sd) UCL	19.61	95% Chebyshev(Mean, Sd) UCL	22.94
97.5% Chebyshev(Mean, Sd) UCL	27.56	99% Chebyshev(Mean, Sd) UCL	36.64

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10	Mean	25.77
Maximum	50.7	Median	25.3
SD	14.36	Std. Error of Mean	5.864
Coefficient of Variation	0.557	Skewness	1.024
Mean of logged Data	3.117	SD of logged Data	0.572

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.58	95% Adjusted-CLT UCL (Chen-1995)	38.03
		95% Modified-t UCL (Johnson-1978)	37.99

Nonparametric Distribution Free UCLs

95% CLT UCL	35.41	95% Jackknife UCL	37.58
95% Standard Bootstrap UCL	34.79	95% Bootstrap-t UCL	40.94
95% Hall's Bootstrap UCL	44.69	95% Percentile Bootstrap UCL	35.02
95% BCA Bootstrap UCL	36.55		
90% Chebyshev(Mean, Sd) UCL	43.36	95% Chebyshev(Mean, Sd) UCL	51.33
97.5% Chebyshev(Mean, Sd) UCL	62.39	99% Chebyshev(Mean, Sd) UCL	84.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.145	Mean	6.254
Maximum	12.25	Median	4.66
SD	3.574	Std. Error of Mean	1.459
Coefficient of Variation	0.571	Skewness	1.182
Mean of logged Data	1.711	SD of logged Data	0.528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.194	95% Adjusted-CLT UCL (Chen-1995)	9.406
		95% Modified-t UCL (Johnson-1978)	9.312

Nonparametric Distribution Free UCLs

95% CLT UCL	8.654	95% Jackknife UCL	9.194
95% Standard Bootstrap UCL	8.399	95% Bootstrap-t UCL	16.44
95% Hall's Bootstrap UCL	24.77	95% Percentile Bootstrap UCL	8.552
95% BCA Bootstrap UCL	9.133		
90% Chebyshev(Mean, Sd) UCL	10.63	95% Chebyshev(Mean, Sd) UCL	12.61
97.5% Chebyshev(Mean, Sd) UCL	15.37	99% Chebyshev(Mean, Sd) UCL	20.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14	Mean	35.73
Maximum	60.4	Median	39.4
SD	17.19	Std. Error of Mean	7.019
Coefficient of Variation	0.481	Skewness	-0.0188
Mean of logged Data	3.457	SD of logged Data	0.565

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.88	95% Adjusted-CLT UCL (Chen-1995)	47.22
		95% Modified-t UCL (Johnson-1978)	49.87

Nonparametric Distribution Free UCLs

95% CLT UCL	47.28	95% Jackknife UCL	49.88

95% Standard Bootstrap UCL	46.06	95% Bootstrap-t UCL	50.36
95% Hall's Bootstrap UCL	46.41	95% Percentile Bootstrap UCL	46.4
95% BCA Bootstrap UCL	46.27		
90% Chebyshev(Mean, Sd) UCL	56.79	95% Chebyshev(Mean, Sd) UCL	66.33
97.5% Chebyshev(Mean, Sd) UCL	79.57	99% Chebyshev(Mean, Sd) UCL	105.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.06	Mean	1.821
Maximum	4.895	Median	1.253
SD	1.508	Std. Error of Mean	0.616
Coefficient of Variation	0.828	Skewness	2.434
Mean of logged Data	0.419	SD of logged Data	0.577

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.061	95% Adjusted-CLT UCL (Chen-1995)	3.487
		95% Modified-t UCL (Johnson-1978)	3.163

Nonparametric Distribution Free UCLs

95% CLT UCL	2.834	95% Jackknife UCL	3.061
95% Standard Bootstrap UCL	2.764	95% Bootstrap-t UCL	25.24
95% Hall's Bootstrap UCL	16.79	95% Percentile Bootstrap UCL	3.014
95% BCA Bootstrap UCL	3.078		
90% Chebyshev(Mean, Sd) UCL	3.668	95% Chebyshev(Mean, Sd) UCL	4.505
97.5% Chebyshev(Mean, Sd) UCL	5.666	99% Chebyshev(Mean, Sd) UCL	7.947

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.505

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	7.71	Mean	19.89
Maximum	38.1	Median	18.9
SD	10.37	Std. Error of Mean	4.232
Coefficient of Variation	0.521	Skewness	1.07
Mean of logged Data	2.875	SD of logged Data	0.535

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.41	95% Adjusted-CLT UCL (Chen-1995)	28.82
		95% Modified-t UCL (Johnson-1978)	28.72

Nonparametric Distribution Free UCLs

95% CLT UCL	26.85	95% Jackknife UCL	28.41
95% Standard Bootstrap UCL	26.29	95% Bootstrap-t UCL	31.99
95% Hall's Bootstrap UCL	63.11	95% Percentile Bootstrap UCL	26.33
95% BCA Bootstrap UCL	27.57		
90% Chebyshev(Mean, Sd) UCL	32.58	95% Chebyshev(Mean, Sd) UCL	38.33
97.5% Chebyshev(Mean, Sd) UCL	46.31	99% Chebyshev(Mean, Sd) UCL	61.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.39	Mean	2.668
Maximum	4.02	Median	2.495
SD	1.124	Std. Error of Mean	0.459
Coefficient of Variation	0.421	Skewness	0.291
Mean of logged Data	0.903	SD of logged Data	0.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.593	95% Adjusted-CLT UCL (Chen-1995)	3.482
		95% Modified-t UCL (Johnson-1978)	3.602

Nonparametric Distribution Free UCLs

95% CLT UCL	3.423	95% Jackknife UCL	3.593
95% Standard Bootstrap UCL	3.36	95% Bootstrap-t UCL	3.793

95% Hall's Bootstrap UCL	3.692	95% Percentile Bootstrap UCL	3.367
95% BCA Bootstrap UCL	3.405		
90% Chebyshev(Mean, Sd) UCL	4.045	95% Chebyshev(Mean, Sd) UCL	4.669
97.5% Chebyshev(Mean, Sd) UCL	5.535	99% Chebyshev(Mean, Sd) UCL	7.236

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.11	Mean	14.6
Maximum	23.6	Median	16.55
SD	7.249	Std. Error of Mean	2.96
Coefficient of Variation	0.497	Skewness	-0.401
Mean of logged Data	2.542	SD of logged Data	0.622

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.56	95% Adjusted-CLT UCL (Chen-1995)	18.95
		95% Modified-t UCL (Johnson-1978)	20.48

Nonparametric Distribution Free UCLs

95% CLT UCL	19.47	95% Jackknife UCL	20.56
95% Standard Bootstrap UCL	18.97	95% Bootstrap-t UCL	19.93
95% Hall's Bootstrap UCL	18.29	95% Percentile Bootstrap UCL	19.15
95% BCA Bootstrap UCL	19.15		
90% Chebyshev(Mean, Sd) UCL	23.48	95% Chebyshev(Mean, Sd) UCL	27.5
97.5% Chebyshev(Mean, Sd) UCL	33.08	99% Chebyshev(Mean, Sd) UCL	44.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	13.9	Mean	34.2
Maximum	63.1	Median	35.05
SD	17.72	Std. Error of Mean	7.236
Coefficient of Variation	0.518	Skewness	0.618
Mean of logged Data	3.409	SD of logged Data	0.561

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.78	95% Adjusted-CLT UCL (Chen-1995)	48.05
		95% Modified-t UCL (Johnson-1978)	49.09

Nonparametric Distribution Free UCLs

95% CLT UCL	46.1	95% Jackknife UCL	48.78
95% Standard Bootstrap UCL	45.08	95% Bootstrap-t UCL	50.13
95% Hall's Bootstrap UCL	50.43	95% Percentile Bootstrap UCL	46.17
95% BCA Bootstrap UCL	46.15		
90% Chebyshev(Mean, Sd) UCL	55.91	95% Chebyshev(Mean, Sd) UCL	65.74
97.5% Chebyshev(Mean, Sd) UCL	79.39	99% Chebyshev(Mean, Sd) UCL	106.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:27:59 PM
From File	27024.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	16.47
Maximum	23.1	Median	14.2
SD	4.035	Std. Error of Mean	1.647
Coefficient of Variation	0.245	Skewness	1.216
Mean of logged Data	2.779	SD of logged Data	0.228

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.79	95% Adjusted-CLT UCL (Chen-1995)	20.05
		95% Modified-t UCL (Johnson-1978)	19.92

Nonparametric Distribution Free UCLs

95% CLT UCL	19.18	95% Jackknife UCL	19.79
95% Standard Bootstrap UCL	18.9	95% Bootstrap-t UCL	55.7
95% Hall's Bootstrap UCL	48.46	95% Percentile Bootstrap UCL	19.07
95% BCA Bootstrap UCL	19.48		
90% Chebyshev(Mean, Sd) UCL	21.41	95% Chebyshev(Mean, Sd) UCL	23.65
97.5% Chebyshev(Mean, Sd) UCL	26.75	99% Chebyshev(Mean, Sd) UCL	32.86

Suggested UCL to Use

95% Student's-t UCL	19.79	or 95% Modified-t UCL	19.92

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.8	Mean	27
Maximum	70.8	Median	16.85
SD	21.77	Std. Error of Mean	8.887
Coefficient of Variation	0.806	Skewness	2.305
Mean of logged Data	3.115	SD of logged Data	0.589

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.91	95% Adjusted-CLT UCL (Chen-1995)	50.55
		95% Modified-t UCL (Johnson-1978)	46.3

Nonparametric Distribution Free UCLs

95% CLT UCL	41.62	95% Jackknife UCL	44.91
95% Standard Bootstrap UCL	40.36	95% Bootstrap-t UCL	405
95% Hall's Bootstrap UCL	168.9	95% Percentile Bootstrap UCL	43.63
95% BCA Bootstrap UCL	45.27		
90% Chebyshev(Mean, Sd) UCL	53.66	95% Chebyshev(Mean, Sd) UCL	65.74
97.5% Chebyshev(Mean, Sd) UCL	82.5	99% Chebyshev(Mean, Sd) UCL	115.4

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	65.74

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.2	Mean	39.53
Maximum	43	Median	39.25
SD	2	Std. Error of Mean	0.816
Coefficient of Variation	0.0506	Skewness	1.013
Mean of logged Data	3.676	SD of logged Data	0.0498

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.18	95% Adjusted-CLT UCL (Chen-1995)	41.24
		95% Modified-t UCL (Johnson-1978)	41.23

Nonparametric Distribution Free UCLs

95% CLT UCL	40.88	95% Jackknife UCL	41.18
95% Standard Bootstrap UCL	40.75	95% Bootstrap-t UCL	41.87
95% Hall's Bootstrap UCL	46.7	95% Percentile Bootstrap UCL	40.82
95% BCA Bootstrap UCL	41.05		
90% Chebyshev(Mean, Sd) UCL	41.98	95% Chebyshev(Mean, Sd) UCL	43.09
97.5% Chebyshev(Mean, Sd) UCL	44.63	99% Chebyshev(Mean, Sd) UCL	47.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.96	Mean	1.149
Maximum	1.97	Median	0.993
SD	0.402	Std. Error of Mean	0.164
Coefficient of Variation	0.35	Skewness	2.442
Mean of logged Data	0.1	SD of logged Data	0.283

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.48	95% Adjusted-CLT UCL (Chen-1995)	1.594
		95% Modified-t UCL (Johnson-1978)	1.507

Nonparametric Distribution Free UCLs

95% CLT UCL	1.419	95% Jackknife UCL	1.48
95% Standard Bootstrap UCL	1.393	95% Bootstrap-t UCL	7.957
95% Hall's Bootstrap UCL	5.434	95% Percentile Bootstrap UCL	1.473
95% BCA Bootstrap UCL	1.482		
90% Chebyshev(Mean, Sd) UCL	1.642	95% Chebyshev(Mean, Sd) UCL	1.865
97.5% Chebyshev(Mean, Sd) UCL	2.175	99% Chebyshev(Mean, Sd) UCL	2.784

Suggested UCL to Use

95% Student's-t UCL	1.48	or 95% Modified-t UCL	1.507

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.51	Mean	0.526
Maximum	0.535	Median	0.525
SD	0.00917	Std. Error of Mean	0.00375
Coefficient of Variation	0.0174	Skewness	-0.944
Mean of logged Data	-0.643	SD of logged Data	0.0175

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.533	95% Adjusted-CLT UCL (Chen-1995)	0.53
		95% Modified-t UCL (Johnson-1978)	0.533

Nonparametric Distribution Free UCLs

95% CLT UCL	0.532	95% Jackknife UCL	0.533
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.537	95% Chebyshev(Mean, Sd) UCL	0.542
97.5% Chebyshev(Mean, Sd) UCL	0.549	99% Chebyshev(Mean, Sd) UCL	0.563

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.075	Mean	2.134
Maximum	2.165	Median	2.138
SD	0.0332	Std. Error of Mean	0.0136
Coefficient of Variation	0.0156	Skewness	-1.219
Mean of logged Data	0.758	SD of logged Data	0.0157

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.162	95% Adjusted-CLT UCL (Chen-1995)	2.149
		95% Modified-t UCL (Johnson-1978)	2.16

Nonparametric Distribution Free UCLs

95% CLT UCL	2.156	95% Jackknife UCL	2.162
95% Standard Bootstrap UCL	2.155	95% Bootstrap-t UCL	2.154
95% Hall's Bootstrap UCL	2.151	95% Percentile Bootstrap UCL	2.153
95% BCA Bootstrap UCL	2.15		
90% Chebyshev(Mean, Sd) UCL	2.175	95% Chebyshev(Mean, Sd) UCL	2.193
97.5% Chebyshev(Mean, Sd) UCL	2.219	99% Chebyshev(Mean, Sd) UCL	2.269

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.08	Mean	2.702
Maximum	4.33	Median	2.325
SD	0.864	Std. Error of Mean	0.353
Coefficient of Variation	0.32	Skewness	1.773
Mean of logged Data	0.958	SD of logged Data	0.281

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.413	95% Adjusted-CLT UCL (Chen-1995)	3.555
		95% Modified-t UCL (Johnson-1978)	3.455

Nonparametric Distribution Free UCLs

95% CLT UCL	3.282	95% Jackknife UCL	3.413
95% Standard Bootstrap UCL	3.23	95% Bootstrap-t UCL	6.169
95% Hall's Bootstrap UCL	6.594	95% Percentile Bootstrap UCL	3.287
95% BCA Bootstrap UCL	3.418		
90% Chebyshev(Mean, Sd) UCL	3.76	95% Chebyshev(Mean, Sd) UCL	4.24
97.5% Chebyshev(Mean, Sd) UCL	4.906	99% Chebyshev(Mean, Sd) UCL	6.213

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.14	Mean	2.995
Maximum	4.96	Median	2.52
SD	1.062	Std. Error of Mean	0.433
Coefficient of Variation	0.355	Skewness	1.648
Mean of logged Data	1.053	SD of logged Data	0.313

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.868	95% Adjusted-CLT UCL (Chen-1995)	4.02
		95% Modified-t UCL (Johnson-1978)	3.917

Nonparametric Distribution Free UCLs

95% CLT UCL	3.708	95% Jackknife UCL	3.868
95% Standard Bootstrap UCL	3.66	95% Bootstrap-t UCL	6.575
95% Hall's Bootstrap UCL	8.254	95% Percentile Bootstrap UCL	3.68
95% BCA Bootstrap UCL	3.81		
90% Chebyshev(Mean, Sd) UCL	4.295	95% Chebyshev(Mean, Sd) UCL	4.884
97.5% Chebyshev(Mean, Sd) UCL	5.702	99% Chebyshev(Mean, Sd) UCL	7.308

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.79	Mean	3.942
Maximum	6.42	Median	3.44
SD	1.312	Std. Error of Mean	0.536
Coefficient of Variation	0.333	Skewness	1.74
Mean of logged Data	1.332	SD of logged Data	0.294

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.021	95% Adjusted-CLT UCL (Chen-1995)	5.229
		95% Modified-t UCL (Johnson-1978)	5.085

Nonparametric Distribution Free UCLs

95% CLT UCL	4.823	95% Jackknife UCL	5.021
95% Standard Bootstrap UCL	4.758	95% Bootstrap-t UCL	7.23
95% Hall's Bootstrap UCL	9.94	95% Percentile Bootstrap UCL	4.77
95% BCA Bootstrap UCL	5.068		
90% Chebyshev(Mean, Sd) UCL	5.549	95% Chebyshev(Mean, Sd) UCL	6.277
97.5% Chebyshev(Mean, Sd) UCL	7.287	99% Chebyshev(Mean, Sd) UCL	9.272

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.24	Mean	2.888
Maximum	3.46	Median	2.953
SD	0.499	Std. Error of Mean	0.204
Coefficient of Variation	0.173	Skewness	-0.22
Mean of logged Data	1.048	SD of logged Data	0.177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.298	95% Adjusted-CLT UCL (Chen-1995)	3.203
		95% Modified-t UCL (Johnson-1978)	3.295

Nonparametric Distribution Free UCLs

95% CLT UCL	3.222	95% Jackknife UCL	3.298
95% Standard Bootstrap UCL	3.19	95% Bootstrap-t UCL	3.286
95% Hall's Bootstrap UCL	3.115	95% Percentile Bootstrap UCL	3.2
95% BCA Bootstrap UCL	3.188		
90% Chebyshev(Mean, Sd) UCL	3.498	95% Chebyshev(Mean, Sd) UCL	3.775
97.5% Chebyshev(Mean, Sd) UCL	4.159	99% Chebyshev(Mean, Sd) UCL	4.914

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.075	Mean	2.229
Maximum	2.53	Median	2.153
SD	0.171	Std. Error of Mean	0.0696
Coefficient of Variation	0.0765	Skewness	1.378
Mean of logged Data	0.799	SD of logged Data	0.0741

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.369	95% Adjusted-CLT UCL (Chen-1995)	2.386
		95% Modified-t UCL (Johnson-1978)	2.376

Nonparametric Distribution Free UCLs

95% CLT UCL	2.344	95% Jackknife UCL	2.369
95% Standard Bootstrap UCL	2.334	95% Bootstrap-t UCL	2.716
95% Hall's Bootstrap UCL	3.259	95% Percentile Bootstrap UCL	2.338
95% BCA Bootstrap UCL	2.367		
90% Chebyshev(Mean, Sd) UCL	2.438	95% Chebyshev(Mean, Sd) UCL	2.533
97.5% Chebyshev(Mean, Sd) UCL	2.664	99% Chebyshev(Mean, Sd) UCL	2.922

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.14	Mean	3.637
Maximum	6.26	Median	3.195
SD	1.479	Std. Error of Mean	0.604
Coefficient of Variation	0.407	Skewness	1.299
Mean of logged Data	1.229	SD of logged Data	0.377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.854	95% Adjusted-CLT UCL (Chen-1995)	4.972
		95% Modified-t UCL (Johnson-1978)	4.907

Nonparametric Distribution Free UCLs

95% CLT UCL	4.63	95% Jackknife UCL	4.854
95% Standard Bootstrap UCL	4.531	95% Bootstrap-t UCL	6.281
95% Hall's Bootstrap UCL	11.45	95% Percentile Bootstrap UCL	4.618
95% BCA Bootstrap UCL	4.802		
90% Chebyshev(Mean, Sd) UCL	5.448	95% Chebyshev(Mean, Sd) UCL	6.269
97.5% Chebyshev(Mean, Sd) UCL	7.408	99% Chebyshev(Mean, Sd) UCL	9.645

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.195	Mean	3.283
Maximum	3.33	Median	3.288
SD	0.0498	Std. Error of Mean	0.0203
Coefficient of Variation	0.0152	Skewness	-1.188
Mean of logged Data	1.189	SD of logged Data	0.0153

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.324	95% Adjusted-CLT UCL (Chen-1995)	3.306
		95% Modified-t UCL (Johnson-1978)	3.323

Nonparametric Distribution Free UCLs

95% CLT UCL	3.317	95% Jackknife UCL	3.324
95% Standard Bootstrap UCL	3.313	95% Bootstrap-t UCL	3.315
95% Hall's Bootstrap UCL	3.311	95% Percentile Bootstrap UCL	3.313
95% BCA Bootstrap UCL	3.307		
90% Chebyshev(Mean, Sd) UCL	3.344	95% Chebyshev(Mean, Sd) UCL	3.372
97.5% Chebyshev(Mean, Sd) UCL	3.41	99% Chebyshev(Mean, Sd) UCL	3.485

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.04	Mean	4.21
Maximum	7.82	Median	4.09
SD	1.978	Std. Error of Mean	0.807
Coefficient of Variation	0.47	Skewness	1.337
Mean of logged Data	1.352	SD of logged Data	0.45

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.837	95% Adjusted-CLT UCL (Chen-1995)	6.009
		95% Modified-t UCL (Johnson-1978)	5.91

Nonparametric Distribution Free UCLs

95% CLT UCL	5.538	95% Jackknife UCL	5.837
95% Standard Bootstrap UCL	5.42	95% Bootstrap-t UCL	6.542
95% Hall's Bootstrap UCL	12.16	95% Percentile Bootstrap UCL	5.417
95% BCA Bootstrap UCL	5.797		
90% Chebyshev(Mean, Sd) UCL	6.632	95% Chebyshev(Mean, Sd) UCL	7.729
97.5% Chebyshev(Mean, Sd) UCL	9.252	99% Chebyshev(Mean, Sd) UCL	12.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.28	Mean	1.314
Maximum	1.335	Median	1.315
SD	0.0193	Std. Error of Mean	0.0079
Coefficient of Variation	0.0147	Skewness	-1.117
Mean of logged Data	0.273	SD of logged Data	0.0148

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.33	95% Adjusted-CLT UCL (Chen-1995)	1.323
		95% Modified-t UCL (Johnson-1978)	1.329

Nonparametric Distribution Free UCLs

95% CLT UCL	1.327	95% Jackknife UCL	1.33
95% Standard Bootstrap UCL	1.326	95% Bootstrap-t UCL	1.326
95% Hall's Bootstrap UCL	1.325	95% Percentile Bootstrap UCL	1.325
95% BCA Bootstrap UCL	1.323		
90% Chebyshev(Mean, Sd) UCL	1.338	95% Chebyshev(Mean, Sd) UCL	1.349
97.5% Chebyshev(Mean, Sd) UCL	1.363	99% Chebyshev(Mean, Sd) UCL	1.393

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.35	Mean	3.148
Maximum	3.44	Median	3.288
SD	0.399	Std. Error of Mean	0.163
Coefficient of Variation	0.127	Skewness	-2.23
Mean of logged Data	1.139	SD of logged Data	0.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.477	95% Adjusted-CLT UCL (Chen-1995)	3.258
		95% Modified-t UCL (Johnson-1978)	3.452

Nonparametric Distribution Free UCLs

95% CLT UCL	3.416	95% Jackknife UCL	3.477
95% Standard Bootstrap UCL	3.382	95% Bootstrap-t UCL	3.364
95% Hall's Bootstrap UCL	3.3	95% Percentile Bootstrap UCL	3.344
95% BCA Bootstrap UCL	3.322		
90% Chebyshev(Mean, Sd) UCL	3.637	95% Chebyshev(Mean, Sd) UCL	3.859
97.5% Chebyshev(Mean, Sd) UCL	4.166	99% Chebyshev(Mean, Sd) UCL	4.769

Suggested UCL to Use

95% Student's-t UCL	3.477	or 95% Modified-t UCL	3.452

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.96	Mean	0.985
Maximum	1	Median	0.985
SD	0.0148	Std. Error of Mean	0.00606
Coefficient of Variation	0.0151	Skewness	-0.827
Mean of logged Data	-0.0152	SD of logged Data	0.0151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.997	95% Adjusted-CLT UCL (Chen-1995)	0.993
		95% Modified-t UCL (Johnson-1978)	0.997

Nonparametric Distribution Free UCLs

95% CLT UCL	0.995	95% Jackknife UCL	0.997
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.003	95% Chebyshev(Mean, Sd) UCL	1.011
97.5% Chebyshev(Mean, Sd) UCL	1.023	99% Chebyshev(Mean, Sd) UCL	1.045

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.17	Mean	3.139
Maximum	3.43	Median	3.31
SD	0.478	Std. Error of Mean	0.195
Coefficient of Variation	0.152	Skewness	-2.382
Mean of logged Data	1.132	SD of logged Data	0.176

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.532	95% Adjusted-CLT UCL (Chen-1995)	3.257
		95% Modified-t UCL (Johnson-1978)	3.5

Nonparametric Distribution Free UCLs

95% CLT UCL	3.46	95% Jackknife UCL	3.532
95% Standard Bootstrap UCL	3.425	95% Bootstrap-t UCL	3.419
95% Hall's Bootstrap UCL	3.323	95% Percentile Bootstrap UCL	3.356
95% BCA Bootstrap UCL	3.339		
90% Chebyshev(Mean, Sd) UCL	3.724	95% Chebyshev(Mean, Sd) UCL	3.989
97.5% Chebyshev(Mean, Sd) UCL	4.357	99% Chebyshev(Mean, Sd) UCL	5.079

Suggested UCL to Use

95% Student's-t UCL	3.532	or 95% Modified-t UCL	3.5

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.81	Mean	4.412
Maximum	7.47	Median	4.125
SD	1.642	Std. Error of Mean	0.67
Coefficient of Variation	0.372	Skewness	1.559
Mean of logged Data	1.434	SD of logged Data	0.337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.762	95% Adjusted-CLT UCL (Chen-1995)	5.97
		95% Modified-t UCL (Johnson-1978)	5.833

Nonparametric Distribution Free UCLs

95% CLT UCL	5.514	95% Jackknife UCL	5.762
95% Standard Bootstrap UCL	5.401	95% Bootstrap-t UCL	6.644
95% Hall's Bootstrap UCL	10.71	95% Percentile Bootstrap UCL	5.47
95% BCA Bootstrap UCL	5.82		
90% Chebyshev(Mean, Sd) UCL	6.422	95% Chebyshev(Mean, Sd) UCL	7.333
97.5% Chebyshev(Mean, Sd) UCL	8.597	99% Chebyshev(Mean, Sd) UCL	11.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:29:03 PM
From File	36017.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.37	Mean	8.143
Maximum	9.54	Median	7.825
SD	0.828	Std. Error of Mean	0.338
Coefficient of Variation	0.102	Skewness	1.17
Mean of logged Data	2.093	SD of logged Data	0.0983

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.824	95% Adjusted-CLT UCL (Chen-1995)	8.872
		95% Modified-t UCL (Johnson-1978)	8.851

Nonparametric Distribution Free UCLs

95% CLT UCL	8.699	95% Jackknife UCL	8.824
95% Standard Bootstrap UCL	8.658	95% Bootstrap-t UCL	10.32
95% Hall's Bootstrap UCL	13.26	95% Percentile Bootstrap UCL	8.693
95% BCA Bootstrap UCL	8.793		
90% Chebyshev(Mean, Sd) UCL	9.157	95% Chebyshev(Mean, Sd) UCL	9.616
97.5% Chebyshev(Mean, Sd) UCL	10.25	99% Chebyshev(Mean, Sd) UCL	11.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.08	Mean	22.98
Maximum	54.7	Median	12.8
SD	19.69	Std. Error of Mean	8.038
Coefficient of Variation	0.857	Skewness	1.125
Mean of logged Data	2.842	SD of logged Data	0.821

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.18	95% Adjusted-CLT UCL (Chen-1995)	40.15
		95% Modified-t UCL (Johnson-1978)	39.79

Nonparametric Distribution Free UCLs

95% CLT UCL	36.2	95% Jackknife UCL	39.18
95% Standard Bootstrap UCL	34.63	95% Bootstrap-t UCL	108
95% Hall's Bootstrap UCL	141.6	95% Percentile Bootstrap UCL	35.93
95% BCA Bootstrap UCL	38.33		
90% Chebyshev(Mean, Sd) UCL	47.09	95% Chebyshev(Mean, Sd) UCL	58.02
97.5% Chebyshev(Mean, Sd) UCL	73.18	99% Chebyshev(Mean, Sd) UCL	103

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23.7	Mean	25.58
Maximum	27.2	Median	25.7
SD	1.294	Std. Error of Mean	0.528
Coefficient of Variation	0.0506	Skewness	-0.317
Mean of logged Data	3.241	SD of logged Data	0.0509

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.65	95% Adjusted-CLT UCL (Chen-1995)	26.38
		95% Modified-t UCL (Johnson-1978)	26.64

Nonparametric Distribution Free UCLs

95% CLT UCL	26.45	95% Jackknife UCL	26.65
95% Standard Bootstrap UCL	26.38	95% Bootstrap-t UCL	26.6
95% Hall's Bootstrap UCL	26.39	95% Percentile Bootstrap UCL	26.37
95% BCA Bootstrap UCL	26.32		
90% Chebyshev(Mean, Sd) UCL	27.17	95% Chebyshev(Mean, Sd) UCL	27.89
97.5% Chebyshev(Mean, Sd) UCL	28.88	99% Chebyshev(Mean, Sd) UCL	30.84

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13	Mean	70.22
Maximum	127	Median	72.1
SD	43.44	Std. Error of Mean	17.73
Coefficient of Variation	0.619	Skewness	-0.0475
Mean of logged Data	4.012	SD of logged Data	0.852

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	106	95% Adjusted-CLT UCL (Chen-1995)	99.02
		95% Modified-t UCL (Johnson-1978)	105.9

Nonparametric Distribution Free UCLs

95% CLT UCL	99.39	95% Jackknife UCL	106
95% Standard Bootstrap UCL	96.37	95% Bootstrap-t UCL	104.9
95% Hall's Bootstrap UCL	93.86	95% Percentile Bootstrap UCL	96.7
95% BCA Bootstrap UCL	95.23		
90% Chebyshev(Mean, Sd) UCL	123.4	95% Chebyshev(Mean, Sd) UCL	147.5
97.5% Chebyshev(Mean, Sd) UCL	181	99% Chebyshev(Mean, Sd) UCL	246.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	66.1	Mean	253.7
Maximum	484	Median	260
SD	152.3	Std. Error of Mean	62.19
Coefficient of Variation	0.6	Skewness	0.349
Mean of logged Data	5.346	SD of logged Data	0.727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	379	95% Adjusted-CLT UCL (Chen-1995)	365.4
		95% Modified-t UCL (Johnson-1978)	380.5

Nonparametric Distribution Free UCLs

95% CLT UCL	356	95% Jackknife UCL	379
95% Standard Bootstrap UCL	347.7	95% Bootstrap-t UCL	395
95% Hall's Bootstrap UCL	355.3	95% Percentile Bootstrap UCL	350
95% BCA Bootstrap UCL	350.8		
90% Chebyshev(Mean, Sd) UCL	440.2	95% Chebyshev(Mean, Sd) UCL	524.7
97.5% Chebyshev(Mean, Sd) UCL	642	99% Chebyshev(Mean, Sd) UCL	872.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	806	Mean	1487
Maximum	2440	Median	1400
SD	619.6	Std. Error of Mean	253
Coefficient of Variation	0.417	Skewness	0.575
Mean of logged Data	7.231	SD of logged Data	0.421

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1996	95% Adjusted-CLT UCL (Chen-1995)	1966
		95% Modified-t UCL (Johnson-1978)	2006

Nonparametric Distribution Free UCLs

95% CLT UCL	1903	95% Jackknife UCL	1996
95% Standard Bootstrap UCL	1869	95% Bootstrap-t UCL	2113
95% Hall's Bootstrap UCL	1928	95% Percentile Bootstrap UCL	1858
95% BCA Bootstrap UCL	1888		
90% Chebyshev(Mean, Sd) UCL	2246	95% Chebyshev(Mean, Sd) UCL	2589
97.5% Chebyshev(Mean, Sd) UCL	3066	99% Chebyshev(Mean, Sd) UCL	4004

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3060	Mean	7008
Maximum	11300	Median	6690
SD	3126	Std. Error of Mean	1276
Coefficient of Variation	0.446	Skewness	0.22
Mean of logged Data	8.762	SD of logged Data	0.488

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9580	95% Adjusted-CLT UCL (Chen-1995)	9230
		95% Modified-t UCL (Johnson-1978)	9599

Nonparametric Distribution Free UCLs

95% CLT UCL	9108	95% Jackknife UCL	9580
95% Standard Bootstrap UCL	8960	95% Bootstrap-t UCL	10188
95% Hall's Bootstrap UCL	10037	95% Percentile Bootstrap UCL	9022
95% BCA Bootstrap UCL	9010		
90% Chebyshev(Mean, Sd) UCL	10837	95% Chebyshev(Mean, Sd) UCL	12571
97.5% Chebyshev(Mean, Sd) UCL	14978	99% Chebyshev(Mean, Sd) UCL	19707

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2850	Mean	7223
Maximum	11800	Median	6950
SD	3405	Std. Error of Mean	1390
Coefficient of Variation	0.471	Skewness	0.154
Mean of logged Data	8.777	SD of logged Data	0.531

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10025	95% Adjusted-CLT UCL (Chen-1995)	9603
		95% Modified-t UCL (Johnson-1978)	10039

Nonparametric Distribution Free UCLs

95% CLT UCL	9510	95% Jackknife UCL	10025
95% Standard Bootstrap UCL	9344	95% Bootstrap-t UCL	10777
95% Hall's Bootstrap UCL	10333	95% Percentile Bootstrap UCL	9357
95% BCA Bootstrap UCL	9380		
90% Chebyshev(Mean, Sd) UCL	11394	95% Chebyshev(Mean, Sd) UCL	13283
97.5% Chebyshev(Mean, Sd) UCL	15905	99% Chebyshev(Mean, Sd) UCL	21055

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4050	Mean	9727
Maximum	15800	Median	9315
SD	4443	Std. Error of Mean	1814
Coefficient of Variation	0.457	Skewness	0.198
Mean of logged Data	9.084	SD of logged Data	0.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13382	95% Adjusted-CLT UCL (Chen-1995)	12867
		95% Modified-t UCL (Johnson-1978)	13406

Nonparametric Distribution Free UCLs

95% CLT UCL	12710	95% Jackknife UCL	13382
95% Standard Bootstrap UCL	12406	95% Bootstrap-t UCL	13859
95% Hall's Bootstrap UCL	14271	95% Percentile Bootstrap UCL	12522
95% BCA Bootstrap UCL	12540		
90% Chebyshev(Mean, Sd) UCL	15168	95% Chebyshev(Mean, Sd) UCL	17633
97.5% Chebyshev(Mean, Sd) UCL	21054	99% Chebyshev(Mean, Sd) UCL	27774

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1880	Mean	4793
Maximum	7430	Median	4810
SD	2117	Std. Error of Mean	864.3
Coefficient of Variation	0.442	Skewness	-0.123
Mean of logged Data	8.376	SD of logged Data	0.516

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6535	95% Adjusted-CLT UCL (Chen-1995)	6169
		95% Modified-t UCL (Johnson-1978)	6528

Nonparametric Distribution Free UCLs

95% CLT UCL	6215	95% Jackknife UCL	6535
95% Standard Bootstrap UCL	6107	95% Bootstrap-t UCL	6566
95% Hall's Bootstrap UCL	6455	95% Percentile Bootstrap UCL	6027
95% BCA Bootstrap UCL	6000		
90% Chebyshev(Mean, Sd) UCL	7386	95% Chebyshev(Mean, Sd) UCL	8561
97.5% Chebyshev(Mean, Sd) UCL	10191	99% Chebyshev(Mean, Sd) UCL	13393

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1510	Mean	3737
Maximum	5830	Median	3690
SD	1636	Std. Error of Mean	667.9
Coefficient of Variation	0.438	Skewness	-0.041
Mean of logged Data	8.131	SD of logged Data	0.503

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5083	95% Adjusted-CLT UCL (Chen-1995)	4823
		95% Modified-t UCL (Johnson-1978)	5081

Nonparametric Distribution Free UCLs

95% CLT UCL	4835	95% Jackknife UCL	5083
95% Standard Bootstrap UCL	4725	95% Bootstrap-t UCL	5334
95% Hall's Bootstrap UCL	5099	95% Percentile Bootstrap UCL	4720
95% BCA Bootstrap UCL	4713		
90% Chebyshev(Mean, Sd) UCL	5740	95% Chebyshev(Mean, Sd) UCL	6648
97.5% Chebyshev(Mean, Sd) UCL	7908	99% Chebyshev(Mean, Sd) UCL	10382

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3550	Mean	8318
Maximum	13200	Median	8155
SD	3584	Std. Error of Mean	1463
Coefficient of Variation	0.431	Skewness	0.0827
Mean of logged Data	8.937	SD of logged Data	0.483

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11267	95% Adjusted-CLT UCL (Chen-1995)	10778
		95% Modified-t UCL (Johnson-1978)	11275

Nonparametric Distribution Free UCLs

95% CLT UCL	10725	95% Jackknife UCL	11267
95% Standard Bootstrap UCL	10541	95% Bootstrap-t UCL	11393
95% Hall's Bootstrap UCL	11229	95% Percentile Bootstrap UCL	10572
95% BCA Bootstrap UCL	10330		
90% Chebyshev(Mean, Sd) UCL	12708	95% Chebyshev(Mean, Sd) UCL	14696
97.5% Chebyshev(Mean, Sd) UCL	17456	99% Chebyshev(Mean, Sd) UCL	22877

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	273	Mean	1131
Maximum	2040	Median	1019
SD	670.8	Std. Error of Mean	273.8
Coefficient of Variation	0.593	Skewness	0.278
Mean of logged Data	6.841	SD of logged Data	0.734

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1682	95% Adjusted-CLT UCL (Chen-1995)	1614
		95% Modified-t UCL (Johnson-1978)	1688

Nonparametric Distribution Free UCLs

95% CLT UCL	1581	95% Jackknife UCL	1682
95% Standard Bootstrap UCL	1535	95% Bootstrap-t UCL	1947
95% Hall's Bootstrap UCL	2018	95% Percentile Bootstrap UCL	1539
95% BCA Bootstrap UCL	1570		
90% Chebyshev(Mean, Sd) UCL	1952	95% Chebyshev(Mean, Sd) UCL	2324
97.5% Chebyshev(Mean, Sd) UCL	2841	99% Chebyshev(Mean, Sd) UCL	3855

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6850	Mean	14492
Maximum	22800	Median	13850
SD	5979	Std. Error of Mean	2441
Coefficient of Variation	0.413	Skewness	0.226
Mean of logged Data	9.504	SD of logged Data	0.444

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19410	95% Adjusted-CLT UCL (Chen-1995)	18748
		95% Modified-t UCL (Johnson-1978)	19448

Nonparametric Distribution Free UCLs

95% CLT UCL	18506	95% Jackknife UCL	19410
95% Standard Bootstrap UCL	18220	95% Bootstrap-t UCL	19840
95% Hall's Bootstrap UCL	20432	95% Percentile Bootstrap UCL	18083
95% BCA Bootstrap UCL	18350		
90% Chebyshev(Mean, Sd) UCL	21814	95% Chebyshev(Mean, Sd) UCL	25131
97.5% Chebyshev(Mean, Sd) UCL	29734	99% Chebyshev(Mean, Sd) UCL	38777

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	66.3	Mean	140.8
Maximum	245	Median	121.6
SD	75.81	Std. Error of Mean	30.95
Coefficient of Variation	0.538	Skewness	0.487
Mean of logged Data	4.821	SD of logged Data	0.555

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	203.2	95% Adjusted-CLT UCL (Chen-1995)	198.3
		95% Modified-t UCL (Johnson-1978)	204.2

Nonparametric Distribution Free UCLs

95% CLT UCL	191.7	95% Jackknife UCL	203.2
95% Standard Bootstrap UCL	187.2	95% Bootstrap-t UCL	213.7
95% Hall's Bootstrap UCL	184.4	95% Percentile Bootstrap UCL	188.4
95% BCA Bootstrap UCL	189.7		
90% Chebyshev(Mean, Sd) UCL	233.7	95% Chebyshev(Mean, Sd) UCL	275.7
97.5% Chebyshev(Mean, Sd) UCL	334.1	99% Chebyshev(Mean, Sd) UCL	448.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2280	Mean	5777
Maximum	9170	Median	5680
SD	2620	Std. Error of Mean	1069
Coefficient of Variation	0.453	Skewness	0.0137
Mean of logged Data	8.56	SD of logged Data	0.52

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7932	95% Adjusted-CLT UCL (Chen-1995)	7542
		95% Modified-t UCL (Johnson-1978)	7933

Nonparametric Distribution Free UCLs

95% CLT UCL	7536	95% Jackknife UCL	7932
95% Standard Bootstrap UCL	7385	95% Bootstrap-t UCL	8124
95% Hall's Bootstrap UCL	8157	95% Percentile Bootstrap UCL	7400
95% BCA Bootstrap UCL	7320		
90% Chebyshev(Mean, Sd) UCL	8985	95% Chebyshev(Mean, Sd) UCL	10438
97.5% Chebyshev(Mean, Sd) UCL	12455	99% Chebyshev(Mean, Sd) UCL	16417

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	31.1	Mean	216.6
Maximum	450	Median	204.5
SD	154.4	Std. Error of Mean	63.01
Coefficient of Variation	0.713	Skewness	0.429
Mean of logged Data	5.07	SD of logged Data	0.972

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	343.6	95% Adjusted-CLT UCL (Chen-1995)	332.1
		95% Modified-t UCL (Johnson-1978)	345.4

Nonparametric Distribution Free UCLs

95% CLT UCL	320.3	95% Jackknife UCL	343.6
95% Standard Bootstrap UCL	312.7	95% Bootstrap-t UCL	354.9
95% Hall's Bootstrap UCL	346	95% Percentile Bootstrap UCL	319.5
95% BCA Bootstrap UCL	313		
90% Chebyshev(Mean, Sd) UCL	405.7	95% Chebyshev(Mean, Sd) UCL	491.3
97.5% Chebyshev(Mean, Sd) UCL	610.2	99% Chebyshev(Mean, Sd) UCL	843.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4200	Mean	7937
Maximum	12300	Median	7700
SD	3009	Std. Error of Mean	1229
Coefficient of Variation	0.379	Skewness	0.298
Mean of logged Data	8.916	SD of logged Data	0.397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10412	95% Adjusted-CLT UCL (Chen-1995)	10117
		95% Modified-t UCL (Johnson-1978)	10437

Nonparametric Distribution Free UCLs

95% CLT UCL	9957	95% Jackknife UCL	10412
95% Standard Bootstrap UCL	9785	95% Bootstrap-t UCL	10988
95% Hall's Bootstrap UCL	10212	95% Percentile Bootstrap UCL	9828
95% BCA Bootstrap UCL	9882		
90% Chebyshev(Mean, Sd) UCL	11622	95% Chebyshev(Mean, Sd) UCL	13292
97.5% Chebyshev(Mean, Sd) UCL	15609	99% Chebyshev(Mean, Sd) UCL	20161

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5720	Mean	12675
Maximum	20100	Median	12200
SD	5360	Std. Error of Mean	2188
Coefficient of Variation	0.423	Skewness	0.185
Mean of logged Data	9.364	SD of logged Data	0.462

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17085	95% Adjusted-CLT UCL (Chen-1995)	16451
		95% Modified-t UCL (Johnson-1978)	17112

Nonparametric Distribution Free UCLs

95% CLT UCL	16275	95% Jackknife UCL	17085
95% Standard Bootstrap UCL	15891	95% Bootstrap-t UCL	17545
95% Hall's Bootstrap UCL	17553	95% Percentile Bootstrap UCL	16105
95% BCA Bootstrap UCL	16188		
90% Chebyshev(Mean, Sd) UCL	19240	95% Chebyshev(Mean, Sd) UCL	22214
97.5% Chebyshev(Mean, Sd) UCL	26341	99% Chebyshev(Mean, Sd) UCL	34449

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:30:02 PM
From File	36028.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.9	Mean	31.28
Maximum	52.9	Median	29
SD	17.7	Std. Error of Mean	7.226
Coefficient of Variation	0.566	Skewness	0.209
Mean of logged Data	3.292	SD of logged Data	0.617

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	45.84	95% Adjusted-CLT UCL (Chen-1995)	43.83
		95% Modified-t UCL (Johnson-1978)	45.95

Nonparametric Distribution Free UCLs

95% CLT UCL	43.17	95% Jackknife UCL	45.84
95% Standard Bootstrap UCL	42.01	95% Bootstrap-t UCL	51.64
95% Hall's Bootstrap UCL	39.22	95% Percentile Bootstrap UCL	42.2
95% BCA Bootstrap UCL	42.65		
90% Chebyshev(Mean, Sd) UCL	52.96	95% Chebyshev(Mean, Sd) UCL	62.78
97.5% Chebyshev(Mean, Sd) UCL	76.41	99% Chebyshev(Mean, Sd) UCL	103.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.4	Mean	12.63
Maximum	14.2	Median	12.95
SD	1.392	Std. Error of Mean	0.568
Coefficient of Variation	0.11	Skewness	-0.768
Mean of logged Data	2.531	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.78	95% Adjusted-CLT UCL (Chen-1995)	13.38
		95% Modified-t UCL (Johnson-1978)	13.75

Nonparametric Distribution Free UCLs

95% CLT UCL	13.57	95% Jackknife UCL	13.78
95% Standard Bootstrap UCL	13.49	95% Bootstrap-t UCL	13.53
95% Hall's Bootstrap UCL	13.38	95% Percentile Bootstrap UCL	13.48
95% BCA Bootstrap UCL	13.42		
90% Chebyshev(Mean, Sd) UCL	14.34	95% Chebyshev(Mean, Sd) UCL	15.11
97.5% Chebyshev(Mean, Sd) UCL	16.18	99% Chebyshev(Mean, Sd) UCL	18.29

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.8	Mean	42.78
Maximum	46	Median	42.8
SD	2.082	Std. Error of Mean	0.85
Coefficient of Variation	0.0487	Skewness	0.195
Mean of logged Data	3.755	SD of logged Data	0.0486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.5	95% Adjusted-CLT UCL (Chen-1995)	44.25
		95% Modified-t UCL (Johnson-1978)	44.51

Nonparametric Distribution Free UCLs

95% CLT UCL	44.18	95% Jackknife UCL	44.5
95% Standard Bootstrap UCL	44.07	95% Bootstrap-t UCL	44.52
95% Hall's Bootstrap UCL	44.6	95% Percentile Bootstrap UCL	44.07
95% BCA Bootstrap UCL	44.07		
90% Chebyshev(Mean, Sd) UCL	45.33	95% Chebyshev(Mean, Sd) UCL	46.49
97.5% Chebyshev(Mean, Sd) UCL	48.09	99% Chebyshev(Mean, Sd) UCL	51.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.656	Mean	1.652
Maximum	4.61	Median	0.989
SD	1.527	Std. Error of Mean	0.623
Coefficient of Variation	0.924	Skewness	1.975
Mean of logged Data	0.232	SD of logged Data	0.749

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.908	95% Adjusted-CLT UCL (Chen-1995)	3.214
		95% Modified-t UCL (Johnson-1978)	2.992

Nonparametric Distribution Free UCLs

95% CLT UCL	2.677	95% Jackknife UCL	2.908
95% Standard Bootstrap UCL	2.603	95% Bootstrap-t UCL	8.893
95% Hall's Bootstrap UCL	8.04	95% Percentile Bootstrap UCL	2.714
95% BCA Bootstrap UCL	3.108		
90% Chebyshev(Mean, Sd) UCL	3.522	95% Chebyshev(Mean, Sd) UCL	4.369
97.5% Chebyshev(Mean, Sd) UCL	5.544	99% Chebyshev(Mean, Sd) UCL	7.854

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.525	Mean	1.091
Maximum	2.41	Median	0.858
SD	0.681	Std. Error of Mean	0.278
Coefficient of Variation	0.624	Skewness	1.933
Mean of logged Data	-0.0403	SD of logged Data	0.523

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.651	95% Adjusted-CLT UCL (Chen-1995)	1.782
		95% Modified-t UCL (Johnson-1978)	1.687

Nonparametric Distribution Free UCLs

95% CLT UCL	1.548	95% Jackknife UCL	1.651
95% Standard Bootstrap UCL	1.518	95% Bootstrap-t UCL	2.649
95% Hall's Bootstrap UCL	3.647	95% Percentile Bootstrap UCL	1.572
95% BCA Bootstrap UCL	1.683		
90% Chebyshev(Mean, Sd) UCL	1.924	95% Chebyshev(Mean, Sd) UCL	2.302
97.5% Chebyshev(Mean, Sd) UCL	2.826	99% Chebyshev(Mean, Sd) UCL	3.855

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.69	Mean	3.588
Maximum	5.63	Median	3.86
SD	1.481	Std. Error of Mean	0.605
Coefficient of Variation	0.413	Skewness	-0.117
Mean of logged Data	1.194	SD of logged Data	0.467

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.807	95% Adjusted-CLT UCL (Chen-1995)	4.552
		95% Modified-t UCL (Johnson-1978)	4.802

Nonparametric Distribution Free UCLs

95% CLT UCL	4.583	95% Jackknife UCL	4.807
95% Standard Bootstrap UCL	4.486	95% Bootstrap-t UCL	4.784
95% Hall's Bootstrap UCL	4.421	95% Percentile Bootstrap UCL	4.53
95% BCA Bootstrap UCL	4.46		
90% Chebyshev(Mean, Sd) UCL	5.402	95% Chebyshev(Mean, Sd) UCL	6.224
97.5% Chebyshev(Mean, Sd) UCL	7.364	99% Chebyshev(Mean, Sd) UCL	9.604

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.1	Mean	23
Maximum	30.9	Median	23.45
SD	6.776	Std. Error of Mean	2.766
Coefficient of Variation	0.295	Skewness	-0.355
Mean of logged Data	3.095	SD of logged Data	0.323

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.57	95% Adjusted-CLT UCL (Chen-1995)	27.12
		95% Modified-t UCL (Johnson-1978)	28.51

Nonparametric Distribution Free UCLs

95% CLT UCL	27.55	95% Jackknife UCL	28.57
95% Standard Bootstrap UCL	27.18	95% Bootstrap-t UCL	28.07
95% Hall's Bootstrap UCL	26.69	95% Percentile Bootstrap UCL	26.9
95% BCA Bootstrap UCL	26.78		
90% Chebyshev(Mean, Sd) UCL	31.3	95% Chebyshev(Mean, Sd) UCL	35.06
97.5% Chebyshev(Mean, Sd) UCL	40.28	99% Chebyshev(Mean, Sd) UCL	50.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	17.5	Mean	30.37
Maximum	37.5	Median	31.25
SD	7.85	Std. Error of Mean	3.205
Coefficient of Variation	0.258	Skewness	-0.846
Mean of logged Data	3.381	SD of logged Data	0.293

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.82	95% Adjusted-CLT UCL (Chen-1995)	34.45
		95% Modified-t UCL (Johnson-1978)	36.64

Nonparametric Distribution Free UCLs

95% CLT UCL	35.64	95% Jackknife UCL	36.82
95% Standard Bootstrap UCL	35.08	95% Bootstrap-t UCL	35.25
95% Hall's Bootstrap UCL	34.2	95% Percentile Bootstrap UCL	35.02
95% BCA Bootstrap UCL	34.25		
90% Chebyshev(Mean, Sd) UCL	39.98	95% Chebyshev(Mean, Sd) UCL	44.33
97.5% Chebyshev(Mean, Sd) UCL	50.38	99% Chebyshev(Mean, Sd) UCL	62.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	22.1	Mean	37.95
Maximum	47.8	Median	38.15
SD	9.831	Std. Error of Mean	4.014
Coefficient of Variation	0.259	Skewness	-0.695
Mean of logged Data	3.604	SD of logged Data	0.29

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.04	95% Adjusted-CLT UCL (Chen-1995)	43.34
		95% Modified-t UCL (Johnson-1978)	45.85

Nonparametric Distribution Free UCLs

95% CLT UCL	44.55	95% Jackknife UCL	46.04
95% Standard Bootstrap UCL	43.9	95% Bootstrap-t UCL	45
95% Hall's Bootstrap UCL	43.61	95% Percentile Bootstrap UCL	43.5
95% BCA Bootstrap UCL	43.22		
90% Chebyshev(Mean, Sd) UCL	49.99	95% Chebyshev(Mean, Sd) UCL	55.44
97.5% Chebyshev(Mean, Sd) UCL	63.01	99% Chebyshev(Mean, Sd) UCL	77.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.1	Mean	21.53
Maximum	27.5	Median	22.3
SD	5.565	Std. Error of Mean	2.272
Coefficient of Variation	0.258	Skewness	-0.962
Mean of logged Data	3.036	SD of logged Data	0.298

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.11	95% Adjusted-CLT UCL (Chen-1995)	24.32
		95% Modified-t UCL (Johnson-1978)	25.96

Nonparametric Distribution Free UCLs

95% CLT UCL	25.27	95% Jackknife UCL	26.11
95% Standard Bootstrap UCL	24.97	95% Bootstrap-t UCL	25.17
95% Hall's Bootstrap UCL	24.59	95% Percentile Bootstrap UCL	24.9
95% BCA Bootstrap UCL	24.47		
90% Chebyshev(Mean, Sd) UCL	28.35	95% Chebyshev(Mean, Sd) UCL	31.44
97.5% Chebyshev(Mean, Sd) UCL	35.72	99% Chebyshev(Mean, Sd) UCL	44.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.24	Mean	15.36

Maximum	19.5	Median	15.25
SD	3.907	Std. Error of Mean	1.595
Coefficient of Variation	0.254	Skewness	-0.537
Mean of logged Data	2.701	SD of logged Data	0.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.57	95% Adjusted-CLT UCL (Chen-1995)	17.61
		95% Modified-t UCL (Johnson-1978)	18.51

Nonparametric Distribution Free UCLs

95% CLT UCL	17.98	95% Jackknife UCL	18.57
95% Standard Bootstrap UCL	17.74	95% Bootstrap-t UCL	18.4
95% Hall's Bootstrap UCL	17.72	95% Percentile Bootstrap UCL	17.92
95% BCA Bootstrap UCL	17.5		
90% Chebyshev(Mean, Sd) UCL	20.14	95% Chebyshev(Mean, Sd) UCL	22.31
97.5% Chebyshev(Mean, Sd) UCL	25.32	99% Chebyshev(Mean, Sd) UCL	31.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.1	Mean	30.05
Maximum	37.8	Median	31.9
SD	7.927	Std. Error of Mean	3.236
Coefficient of Variation	0.264	Skewness	-0.896
Mean of logged Data	3.368	SD of logged Data	0.301

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.57	95% Adjusted-CLT UCL (Chen-1995)	34.11
		95% Modified-t UCL (Johnson-1978)	36.37

Nonparametric Distribution Free UCLs

95% CLT UCL	35.37	95% Jackknife UCL	36.57

95% Standard Bootstrap UCL	34.98	95% Bootstrap-t UCL	35.47
95% Hall's Bootstrap UCL	33.88	95% Percentile Bootstrap UCL	34.83
95% BCA Bootstrap UCL	33.8		
90% Chebyshev(Mean, Sd) UCL	39.76	95% Chebyshev(Mean, Sd) UCL	44.16
97.5% Chebyshev(Mean, Sd) UCL	50.26	99% Chebyshev(Mean, Sd) UCL	62.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.86	Mean	5.237
Maximum	6.32	Median	5.61
SD	1.31	Std. Error of Mean	0.535
Coefficient of Variation	0.25	Skewness	-1.451
Mean of logged Data	1.622	SD of logged Data	0.3

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.314	95% Adjusted-CLT UCL (Chen-1995)	5.778
		95% Modified-t UCL (Johnson-1978)	6.262

Nonparametric Distribution Free UCLs

95% CLT UCL	6.116	95% Jackknife UCL	6.314
95% Standard Bootstrap UCL	6.032	95% Bootstrap-t UCL	5.971
95% Hall's Bootstrap UCL	5.831	95% Percentile Bootstrap UCL	5.977
95% BCA Bootstrap UCL	5.903		
90% Chebyshev(Mean, Sd) UCL	6.841	95% Chebyshev(Mean, Sd) UCL	7.568
97.5% Chebyshev(Mean, Sd) UCL	8.577	99% Chebyshev(Mean, Sd) UCL	10.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.1	Mean	42.5
Maximum	59.3	Median	42.1
SD	14.15	Std. Error of Mean	5.776
Coefficient of Variation	0.333	Skewness	-0.0333
Mean of logged Data	3.699	SD of logged Data	0.355

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.14	95% Adjusted-CLT UCL (Chen-1995)	51.92
		95% Modified-t UCL (Johnson-1978)	54.12

Nonparametric Distribution Free UCLs

95% CLT UCL	52	95% Jackknife UCL	54.14
95% Standard Bootstrap UCL	51.1	95% Bootstrap-t UCL	54.5
95% Hall's Bootstrap UCL	52.07	95% Percentile Bootstrap UCL	51
95% BCA Bootstrap UCL	51		
90% Chebyshev(Mean, Sd) UCL	59.83	95% Chebyshev(Mean, Sd) UCL	67.68
97.5% Chebyshev(Mean, Sd) UCL	78.57	99% Chebyshev(Mean, Sd) UCL	99.97

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.295	Mean	1.428
Maximum	2.02	Median	1.315
SD	0.29	Std. Error of Mean	0.118
Coefficient of Variation	0.203	Skewness	2.444
Mean of logged Data	0.342	SD of logged Data	0.177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1.667	95% Adjusted-CLT UCL (Chen-1995)	1.749
		95% Modified-t UCL (Johnson-1978)	1.687

Nonparametric Distribution Free UCLs

95% CLT UCL	1.623	95% Jackknife UCL	1.667
95% Standard Bootstrap UCL	1.607	95% Bootstrap-t UCL	6.914
95% Hall's Bootstrap UCL	6.288	95% Percentile Bootstrap UCL	1.663
95% BCA Bootstrap UCL	1.668		
90% Chebyshev(Mean, Sd) UCL	1.784	95% Chebyshev(Mean, Sd) UCL	1.944
97.5% Chebyshev(Mean, Sd) UCL	2.168	99% Chebyshev(Mean, Sd) UCL	2.606

Suggested UCL to Use

95% Student's-t UCL	1.667	or 95% Modified-t UCL	1.687

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.8	Mean	23.57
Maximum	29.6	Median	24.35
SD	5.72	Std. Error of Mean	2.335
Coefficient of Variation	0.243	Skewness	-1
Mean of logged Data	3.131	SD of logged Data	0.277

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.27	95% Adjusted-CLT UCL (Chen-1995)	26.39
		95% Modified-t UCL (Johnson-1978)	28.11

Nonparametric Distribution Free UCLs

95% CLT UCL	27.41	95% Jackknife UCL	28.27
95% Standard Bootstrap UCL	27.08	95% Bootstrap-t UCL	27.2
95% Hall's Bootstrap UCL	26.57	95% Percentile Bootstrap UCL	27.02
95% BCA Bootstrap UCL	26.5		
90% Chebyshev(Mean, Sd) UCL	30.57	95% Chebyshev(Mean, Sd) UCL	33.75
97.5% Chebyshev(Mean, Sd) UCL	38.15	99% Chebyshev(Mean, Sd) UCL	46.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.29	Mean	2.557
Maximum	6.64	Median	1.825
SD	2.025	Std. Error of Mean	0.827
Coefficient of Variation	0.792	Skewness	2.317
Mean of logged Data	0.763	SD of logged Data	0.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.223	95% Adjusted-CLT UCL (Chen-1995)	4.752
		95% Modified-t UCL (Johnson-1978)	4.353

Nonparametric Distribution Free UCLs

95% CLT UCL	3.917	95% Jackknife UCL	4.223
95% Standard Bootstrap UCL	3.816	95% Bootstrap-t UCL	9.916
95% Hall's Bootstrap UCL	10.46	95% Percentile Bootstrap UCL	4.132
95% BCA Bootstrap UCL	4.31		
90% Chebyshev(Mean, Sd) UCL	5.037	95% Chebyshev(Mean, Sd) UCL	6.16
97.5% Chebyshev(Mean, Sd) UCL	7.72	99% Chebyshev(Mean, Sd) UCL	10.78

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.1	Mean	22.88
Maximum	36.1	Median	24.5
SD	9.552	Std. Error of Mean	3.9
Coefficient of Variation	0.417	Skewness	-0.0786
Mean of logged Data	3.046	SD of logged Data	0.469

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.74	95% Adjusted-CLT UCL (Chen-1995)	29.16

		95% Modified-t UCL (Johnson-1978)	30.72

Nonparametric Distribution Free UCLs

95% CLT UCL	29.3	95% Jackknife UCL	30.74
95% Standard Bootstrap UCL	28.74	95% Bootstrap-t UCL	30.27
95% Hall's Bootstrap UCL	29.09	95% Percentile Bootstrap UCL	28.88
95% BCA Bootstrap UCL	28.42		
90% Chebyshev(Mean, Sd) UCL	34.58	95% Chebyshev(Mean, Sd) UCL	39.88
97.5% Chebyshev(Mean, Sd) UCL	47.24	99% Chebyshev(Mean, Sd) UCL	61.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.1	Mean	42.1
Maximum	57.4	Median	42.65
SD	13.02	Std. Error of Mean	5.314
Coefficient of Variation	0.309	Skewness	-0.217
Mean of logged Data	3.696	SD of logged Data	0.334

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.81	95% Adjusted-CLT UCL (Chen-1995)	50.34
		95% Modified-t UCL (Johnson-1978)	52.73

Nonparametric Distribution Free UCLs

95% CLT UCL	50.84	95% Jackknife UCL	52.81
95% Standard Bootstrap UCL	49.93	95% Bootstrap-t UCL	53.42
95% Hall's Bootstrap UCL	49.63	95% Percentile Bootstrap UCL	49.9
95% BCA Bootstrap UCL	49.73		
90% Chebyshev(Mean, Sd) UCL	58.04	95% Chebyshev(Mean, Sd) UCL	65.26
97.5% Chebyshev(Mean, Sd) UCL	75.28	99% Chebyshev(Mean, Sd) UCL	94.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:31:42 PM
From File	36030.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12	Mean	13.75
Maximum	15.8	Median	13.75
SD	1.525	Std. Error of Mean	0.623
Coefficient of Variation	0.111	Skewness	0.165
Mean of logged Data	2.616	SD of logged Data	0.111

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15	95% Adjusted-CLT UCL (Chen-1995)	14.82
		95% Modified-t UCL (Johnson-1978)	15.01

Nonparametric Distribution Free UCLs

95% CLT UCL	14.77	95% Jackknife UCL	15
95% Standard Bootstrap UCL	14.68	95% Bootstrap-t UCL	15.19
95% Hall's Bootstrap UCL	14.47	95% Percentile Bootstrap UCL	14.67
95% BCA Bootstrap UCL	14.67		
90% Chebyshev(Mean, Sd) UCL	15.62	95% Chebyshev(Mean, Sd) UCL	16.46
97.5% Chebyshev(Mean, Sd) UCL	17.64	99% Chebyshev(Mean, Sd) UCL	19.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.84	Mean	11.09
Maximum	12.5	Median	11.05
SD	1.005	Std. Error of Mean	0.41
Coefficient of Variation	0.0906	Skewness	0.199
Mean of logged Data	2.403	SD of logged Data	0.0905

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.92	95% Adjusted-CLT UCL (Chen-1995)	11.8
		95% Modified-t UCL (Johnson-1978)	11.92

Nonparametric Distribution Free UCLs

95% CLT UCL	11.76	95% Jackknife UCL	11.92
95% Standard Bootstrap UCL	11.71	95% Bootstrap-t UCL	12.12
95% Hall's Bootstrap UCL	11.98	95% Percentile Bootstrap UCL	11.7
95% BCA Bootstrap UCL	11.7		
90% Chebyshev(Mean, Sd) UCL	12.32	95% Chebyshev(Mean, Sd) UCL	12.88
97.5% Chebyshev(Mean, Sd) UCL	13.65	99% Chebyshev(Mean, Sd) UCL	15.17

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.1	Mean	45.87
Maximum	52.6	Median	44.9
SD	4.723	Std. Error of Mean	1.928
Coefficient of Variation	0.103	Skewness	0.549
Mean of logged Data	3.821	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.75	95% Adjusted-CLT UCL (Chen-1995)	49.5
		95% Modified-t UCL (Johnson-1978)	49.82

Nonparametric Distribution Free UCLs

95% CLT UCL	49.04	95% Jackknife UCL	49.75
95% Standard Bootstrap UCL	48.78	95% Bootstrap-t UCL	52.09
95% Hall's Bootstrap UCL	54.84	95% Percentile Bootstrap UCL	48.8
95% BCA Bootstrap UCL	49.08		
90% Chebyshev(Mean, Sd) UCL	51.65	95% Chebyshev(Mean, Sd) UCL	54.27
97.5% Chebyshev(Mean, Sd) UCL	57.91	99% Chebyshev(Mean, Sd) UCL	65.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.693	Mean	1.066
Maximum	2	Median	0.883
SD	0.48	Std. Error of Mean	0.196
Coefficient of Variation	0.45	Skewness	1.993
Mean of logged Data	-0.00252	SD of logged Data	0.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.461	95% Adjusted-CLT UCL (Chen-1995)	1.558
		95% Modified-t UCL (Johnson-1978)	1.487

Nonparametric Distribution Free UCLs

95% CLT UCL	1.388	95% Jackknife UCL	1.461
95% Standard Bootstrap UCL	1.347	95% Bootstrap-t UCL	2.531
95% Hall's Bootstrap UCL	3.174	95% Percentile Bootstrap UCL	1.41
95% BCA Bootstrap UCL	1.52		
90% Chebyshev(Mean, Sd) UCL	1.653	95% Chebyshev(Mean, Sd) UCL	1.92
97.5% Chebyshev(Mean, Sd) UCL	2.289	99% Chebyshev(Mean, Sd) UCL	3.014

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.515	Mean	0.523
Maximum	0.535	Median	0.52
SD	0.0088	Std. Error of Mean	0.00359
Coefficient of Variation	0.0168	Skewness	0.495
Mean of logged Data	-0.649	SD of logged Data	0.0168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.53	95% Adjusted-CLT UCL (Chen-1995)	0.529
		95% Modified-t UCL (Johnson-1978)	0.53

Nonparametric Distribution Free UCLs

95% CLT UCL	0.528	95% Jackknife UCL	0.53
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.533	95% Chebyshev(Mean, Sd) UCL	0.538
97.5% Chebyshev(Mean, Sd) UCL	0.545	99% Chebyshev(Mean, Sd) UCL	0.558

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.44	Mean	2.203
Maximum	3.13	Median	2.128
SD	0.692	Std. Error of Mean	0.283
Coefficient of Variation	0.314	Skewness	0.301
Mean of logged Data	0.748	SD of logged Data	0.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.772	95% Adjusted-CLT UCL (Chen-1995)	2.704
		95% Modified-t UCL (Johnson-1978)	2.778

Nonparametric Distribution Free UCLs

95% CLT UCL	2.667	95% Jackknife UCL	2.772
95% Standard Bootstrap UCL	2.625	95% Bootstrap-t UCL	2.947
95% Hall's Bootstrap UCL	2.993	95% Percentile Bootstrap UCL	2.623
95% BCA Bootstrap UCL	2.658		
90% Chebyshev(Mean, Sd) UCL	3.05	95% Chebyshev(Mean, Sd) UCL	3.434
97.5% Chebyshev(Mean, Sd) UCL	3.967	99% Chebyshev(Mean, Sd) UCL	5.013

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.32	Mean	15.64
Maximum	25.9	Median	14.3
SD	8.114	Std. Error of Mean	3.312
Coefficient of Variation	0.519	Skewness	0.24
Mean of logged Data	2.617	SD of logged Data	0.594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.31	95% Adjusted-CLT UCL (Chen-1995)	21.43
		95% Modified-t UCL (Johnson-1978)	22.37

Nonparametric Distribution Free UCLs

95% CLT UCL	21.09	95% Jackknife UCL	22.31
95% Standard Bootstrap UCL	20.76	95% Bootstrap-t UCL	25.38
95% Hall's Bootstrap UCL	27.32	95% Percentile Bootstrap UCL	20.6
95% BCA Bootstrap UCL	20.9		
90% Chebyshev(Mean, Sd) UCL	25.58	95% Chebyshev(Mean, Sd) UCL	30.08
97.5% Chebyshev(Mean, Sd) UCL	36.32	99% Chebyshev(Mean, Sd) UCL	48.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.92	Mean	19.45
Maximum	31.6	Median	19
SD	10.11	Std. Error of Mean	4.129
Coefficient of Variation	0.52	Skewness	0.0632
Mean of logged Data	2.83	SD of logged Data	0.606

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	27.77	95% Adjusted-CLT UCL (Chen-1995)	26.35
		95% Modified-t UCL (Johnson-1978)	27.79

Nonparametric Distribution Free UCLs

95% CLT UCL	26.24	95% Jackknife UCL	27.77
95% Standard Bootstrap UCL	25.64	95% Bootstrap-t UCL	29.06
95% Hall's Bootstrap UCL	28.93	95% Percentile Bootstrap UCL	25.31
95% BCA Bootstrap UCL	25.42		
90% Chebyshev(Mean, Sd) UCL	31.84	95% Chebyshev(Mean, Sd) UCL	37.45
97.5% Chebyshev(Mean, Sd) UCL	45.23	99% Chebyshev(Mean, Sd) UCL	60.53

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.9	Mean	26.85
Maximum	42.9	Median	26.1
SD	13.44	Std. Error of Mean	5.486
Coefficient of Variation	0.5	Skewness	0.0649
Mean of logged Data	3.165	SD of logged Data	0.577

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.9	95% Adjusted-CLT UCL (Chen-1995)	36.03
		95% Modified-t UCL (Johnson-1978)	37.93

Nonparametric Distribution Free UCLs

95% CLT UCL	35.87	95% Jackknife UCL	37.9
95% Standard Bootstrap UCL	35.13	95% Bootstrap-t UCL	39.73
95% Hall's Bootstrap UCL	39.21	95% Percentile Bootstrap UCL	34.95
95% BCA Bootstrap UCL	34.83		
90% Chebyshev(Mean, Sd) UCL	43.31	95% Chebyshev(Mean, Sd) UCL	50.76
97.5% Chebyshev(Mean, Sd) UCL	61.11	99% Chebyshev(Mean, Sd) UCL	81.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.49	Mean	15.04
Maximum	24.1	Median	14.55
SD	7.832	Std. Error of Mean	3.198
Coefficient of Variation	0.521	Skewness	0.103
Mean of logged Data	2.575	SD of logged Data	0.6

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.48	95% Adjusted-CLT UCL (Chen-1995)	20.44
		95% Modified-t UCL (Johnson-1978)	21.51

Nonparametric Distribution Free UCLs

95% CLT UCL	20.3	95% Jackknife UCL	21.48
95% Standard Bootstrap UCL	19.82	95% Bootstrap-t UCL	22.95
95% Hall's Bootstrap UCL	22.82	95% Percentile Bootstrap UCL	19.71
95% BCA Bootstrap UCL	19.42		
90% Chebyshev(Mean, Sd) UCL	24.63	95% Chebyshev(Mean, Sd) UCL	28.98
97.5% Chebyshev(Mean, Sd) UCL	35.01	99% Chebyshev(Mean, Sd) UCL	46.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.165	Mean	9.289
Maximum	17.2	Median	8.02
SD	6.37	Std. Error of Mean	2.6
Coefficient of Variation	0.686	Skewness	0.339
Mean of logged Data	1.982	SD of logged Data	0.821

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.53	95% Adjusted-CLT UCL (Chen-1995)	13.95
		95% Modified-t UCL (Johnson-1978)	14.59

Nonparametric Distribution Free UCLs

95% CLT UCL	13.57	95% Jackknife UCL	14.53
95% Standard Bootstrap UCL	13.21	95% Bootstrap-t UCL	17.97
95% Hall's Bootstrap UCL	14.21	95% Percentile Bootstrap UCL	13.24
95% BCA Bootstrap UCL	13.26		
90% Chebyshev(Mean, Sd) UCL	17.09	95% Chebyshev(Mean, Sd) UCL	20.62
97.5% Chebyshev(Mean, Sd) UCL	25.53	99% Chebyshev(Mean, Sd) UCL	35.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.52	Mean	21
Maximum	34.2	Median	20.2
SD	10.72	Std. Error of Mean	4.376
Coefficient of Variation	0.51	Skewness	0.11
Mean of logged Data	2.914	SD of logged Data	0.589

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.82	95% Adjusted-CLT UCL (Chen-1995)	28.41
		95% Modified-t UCL (Johnson-1978)	29.85

Nonparametric Distribution Free UCLs

95% CLT UCL	28.2	95% Jackknife UCL	29.82
95% Standard Bootstrap UCL	27.45	95% Bootstrap-t UCL	30.86
95% Hall's Bootstrap UCL	31.45	95% Percentile Bootstrap UCL	27.33
95% BCA Bootstrap UCL	27.92		
90% Chebyshev(Mean, Sd) UCL	34.13	95% Chebyshev(Mean, Sd) UCL	40.08
97.5% Chebyshev(Mean, Sd) UCL	48.33	99% Chebyshev(Mean, Sd) UCL	64.55

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.22	Mean	4.212

Maximum	5.89	Median	3.655
SD	1.199	Std. Error of Mean	0.489
Coefficient of Variation	0.285	Skewness	0.892
Mean of logged Data	1.406	SD of logged Data	0.269

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.198	95% Adjusted-CLT UCL (Chen-1995)	5.207
		95% Modified-t UCL (Johnson-1978)	5.228

Nonparametric Distribution Free UCLs

95% CLT UCL	5.017	95% Jackknife UCL	5.198
95% Standard Bootstrap UCL	4.95	95% Bootstrap-t UCL	8.232
95% Hall's Bootstrap UCL	13.87	95% Percentile Bootstrap UCL	5.008
95% BCA Bootstrap UCL	5.012		
90% Chebyshev(Mean, Sd) UCL	5.68	95% Chebyshev(Mean, Sd) UCL	6.345
97.5% Chebyshev(Mean, Sd) UCL	7.268	99% Chebyshev(Mean, Sd) UCL	9.081

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.55	Mean	28.54
Maximum	45.6	Median	25.6
SD	14.44	Std. Error of Mean	5.894
Coefficient of Variation	0.506	Skewness	0.204
Mean of logged Data	3.224	SD of logged Data	0.586

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.42	95% Adjusted-CLT UCL (Chen-1995)	38.76
		95% Modified-t UCL (Johnson-1978)	40.5

Nonparametric Distribution Free UCLs

95% CLT UCL	38.24	95% Jackknife UCL	40.42
95% Standard Bootstrap UCL	37.43	95% Bootstrap-t UCL	46.62
95% Hall's Bootstrap UCL	53.41	95% Percentile Bootstrap UCL	37.57
95% BCA Bootstrap UCL	38.1		

90% Chebyshev(Mean, Sd) UCL	46.22	95% Chebyshev(Mean, Sd) UCL	54.23
97.5% Chebyshev(Mean, Sd) UCL	65.35	99% Chebyshev(Mean, Sd) UCL	87.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.285	Mean	1.304
Maximum	1.33	Median	1.3
SD	0.0186	Std. Error of Mean	0.00757
Coefficient of Variation	0.0142	Skewness	0.408
Mean of logged Data	0.265	SD of logged Data	0.0142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.319	95% Adjusted-CLT UCL (Chen-1995)	1.318
		95% Modified-t UCL (Johnson-1978)	1.32

Nonparametric Distribution Free UCLs

95% CLT UCL	1.317	95% Jackknife UCL	1.319
95% Standard Bootstrap UCL	1.316	95% Bootstrap-t UCL	1.32
95% Hall's Bootstrap UCL	1.313	95% Percentile Bootstrap UCL	1.316
95% BCA Bootstrap UCL	1.316		
90% Chebyshev(Mean, Sd) UCL	1.327	95% Chebyshev(Mean, Sd) UCL	1.337
97.5% Chebyshev(Mean, Sd) UCL	1.351	99% Chebyshev(Mean, Sd) UCL	1.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.47	Mean	17.69
Maximum	28.1	Median	17.35
SD	8.993	Std. Error of Mean	3.671
Coefficient of Variation	0.508	Skewness	0.0377
Mean of logged Data	2.742	SD of logged Data	0.591

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.08	95% Adjusted-CLT UCL (Chen-1995)	23.78
		95% Modified-t UCL (Johnson-1978)	25.09

Nonparametric Distribution Free UCLs

95% CLT UCL	23.72	95% Jackknife UCL	25.08
95% Standard Bootstrap UCL	23.23	95% Bootstrap-t UCL	26.1
95% Hall's Bootstrap UCL	26.04	95% Percentile Bootstrap UCL	22.82
95% BCA Bootstrap UCL	23.06		
90% Chebyshev(Mean, Sd) UCL	28.7	95% Chebyshev(Mean, Sd) UCL	33.69
97.5% Chebyshev(Mean, Sd) UCL	40.61	99% Chebyshev(Mean, Sd) UCL	54.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1	Mean	2.473
Maximum	6.57	Median	1.765
SD	2.067	Std. Error of Mean	0.844
Coefficient of Variation	0.836	Skewness	2.146
Mean of logged Data	0.695	SD of logged Data	0.657

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.174	95% Adjusted-CLT UCL (Chen-1995)	4.651
		95% Modified-t UCL (Johnson-1978)	4.297

Nonparametric Distribution Free UCLs

95% CLT UCL	3.861	95% Jackknife UCL	4.174
95% Standard Bootstrap UCL	3.72	95% Bootstrap-t UCL	8.705
95% Hall's Bootstrap UCL	10.8	95% Percentile Bootstrap UCL	4.025
95% BCA Bootstrap UCL	4.388		
90% Chebyshev(Mean, Sd) UCL	5.005	95% Chebyshev(Mean, Sd) UCL	6.152
97.5% Chebyshev(Mean, Sd) UCL	7.743	99% Chebyshev(Mean, Sd) UCL	10.87

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.29	Mean	11.19
Maximum	18.5	Median	9.53
SD	5.874	Std. Error of Mean	2.398
Coefficient of Variation	0.525	Skewness	0.232
Mean of logged Data	2.272	SD of logged Data	0.628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.02	95% Adjusted-CLT UCL (Chen-1995)	15.38
		95% Modified-t UCL (Johnson-1978)	16.06

Nonparametric Distribution Free UCLs

95% CLT UCL	15.13	95% Jackknife UCL	16.02
95% Standard Bootstrap UCL	14.85	95% Bootstrap-t UCL	19.14
95% Hall's Bootstrap UCL	25.73	95% Percentile Bootstrap UCL	15.06
95% BCA Bootstrap UCL	14.94		
90% Chebyshev(Mean, Sd) UCL	18.38	95% Chebyshev(Mean, Sd) UCL	21.64
97.5% Chebyshev(Mean, Sd) UCL	26.16	99% Chebyshev(Mean, Sd) UCL	35.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.2	Mean	28.17
Maximum	44.8	Median	26.1
SD	14.05	Std. Error of Mean	5.737
Coefficient of Variation	0.499	Skewness	0.18
Mean of logged Data	3.216	SD of logged Data	0.568

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.73	95% Adjusted-CLT UCL (Chen-1995)	38.05
		95% Modified-t UCL (Johnson-1978)	39.8

Nonparametric Distribution Free UCLs

95% CLT UCL	37.6	95% Jackknife UCL	39.73
95% Standard Bootstrap UCL	36.69	95% Bootstrap-t UCL	44.98
95% Hall's Bootstrap UCL	44.39	95% Percentile Bootstrap UCL	36.57
95% BCA Bootstrap UCL	37.23		
90% Chebyshev(Mean, Sd) UCL	45.38	95% Chebyshev(Mean, Sd) UCL	53.17
97.5% Chebyshev(Mean, Sd) UCL	63.99	99% Chebyshev(Mean, Sd) UCL	85.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:32:46 PM
From File	37017.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.4	Mean	16.23
Maximum	16.7	Median	16.4
SD	0.497	Std. Error of Mean	0.203
Coefficient of Variation	0.0306	Skewness	-1.091
Mean of logged Data	2.787	SD of logged Data	0.031

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.64	95% Adjusted-CLT UCL (Chen-1995)	16.47
		95% Modified-t UCL (Johnson-1978)	16.63

Nonparametric Distribution Free UCLs

95% CLT UCL	16.57	95% Jackknife UCL	16.64
95% Standard Bootstrap UCL	16.54	95% Bootstrap-t UCL	16.53
95% Hall's Bootstrap UCL	16.46	95% Percentile Bootstrap UCL	16.52
95% BCA Bootstrap UCL	16.48		
90% Chebyshev(Mean, Sd) UCL	16.84	95% Chebyshev(Mean, Sd) UCL	17.12
97.5% Chebyshev(Mean, Sd) UCL	17.5	99% Chebyshev(Mean, Sd) UCL	18.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.2	Mean	12.63
Maximum	13	Median	12.7
SD	0.344	Std. Error of Mean	0.141
Coefficient of Variation	0.0273	Skewness	-0.246

Mean of logged Data	2.536	SD of logged Data	0.0273

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.92	95% Adjusted-CLT UCL (Chen-1995)	12.85
		95% Modified-t UCL (Johnson-1978)	12.91

Nonparametric Distribution Free UCLs

95% CLT UCL	12.86	95% Jackknife UCL	12.92
95% Standard Bootstrap UCL	12.84	95% Bootstrap-t UCL	12.89
95% Hall's Bootstrap UCL	12.78	95% Percentile Bootstrap UCL	12.83
95% BCA Bootstrap UCL	12.83		
90% Chebyshev(Mean, Sd) UCL	13.06	95% Chebyshev(Mean, Sd) UCL	13.25
97.5% Chebyshev(Mean, Sd) UCL	13.51	99% Chebyshev(Mean, Sd) UCL	14.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.3	Mean	54.28
Maximum	56.4	Median	54.2
SD	1.97	Std. Error of Mean	0.804
Coefficient of Variation	0.0363	Skewness	-0.395
Mean of logged Data	3.994	SD of logged Data	0.0365

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.9	95% Adjusted-CLT UCL (Chen-1995)	55.47
		95% Modified-t UCL (Johnson-1978)	55.88

Nonparametric Distribution Free UCLs

95% CLT UCL	55.61	95% Jackknife UCL	55.9
95% Standard Bootstrap UCL	55.5	95% Bootstrap-t UCL	55.9
95% Hall's Bootstrap UCL	55.55	95% Percentile Bootstrap UCL	55.4
95% BCA Bootstrap UCL	55.38		

90% Chebyshev(Mean, Sd) UCL	56.7	95% Chebyshev(Mean, Sd) UCL	57.79
97.5% Chebyshev(Mean, Sd) UCL	59.31	99% Chebyshev(Mean, Sd) UCL	62.29

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.39	Mean	3.28
Maximum	4.5	Median	3.18
SD	0.809	Std. Error of Mean	0.33
Coefficient of Variation	0.247	Skewness	0.51
Mean of logged Data	1.163	SD of logged Data	0.244

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.945	95% Adjusted-CLT UCL (Chen-1995)	3.897
		95% Modified-t UCL (Johnson-1978)	3.957

Nonparametric Distribution Free UCLs

95% CLT UCL	3.823	95% Jackknife UCL	3.945
95% Standard Bootstrap UCL	3.775	95% Bootstrap-t UCL	4.25
95% Hall's Bootstrap UCL	3.8	95% Percentile Bootstrap UCL	3.763
95% BCA Bootstrap UCL	3.798		
90% Chebyshev(Mean, Sd) UCL	4.27	95% Chebyshev(Mean, Sd) UCL	4.719
97.5% Chebyshev(Mean, Sd) UCL	5.342	99% Chebyshev(Mean, Sd) UCL	6.565

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.396	Mean	0.478
Maximum	0.525	Median	0.496

SD	0.0529	Std. Error of Mean	0.0216
Coefficient of Variation	0.111	Skewness	-0.797
Mean of logged Data	-0.744	SD of logged Data	0.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.521	95% Adjusted-CLT UCL (Chen-1995)	0.506
		95% Modified-t UCL (Johnson-1978)	0.52

Nonparametric Distribution Free UCLs

95% CLT UCL	0.513	95% Jackknife UCL	0.521
95% Standard Bootstrap UCL	0.51	95% Bootstrap-t UCL	0.514
95% Hall's Bootstrap UCL	0.502	95% Percentile Bootstrap UCL	0.508
95% BCA Bootstrap UCL	0.505		
90% Chebyshev(Mean, Sd) UCL	0.542	95% Chebyshev(Mean, Sd) UCL	0.572
97.5% Chebyshev(Mean, Sd) UCL	0.613	99% Chebyshev(Mean, Sd) UCL	0.693

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.935	Mean	2.09
Maximum	2.145	Median	2.118
SD	0.0786	Std. Error of Mean	0.0321
Coefficient of Variation	0.0376	Skewness	-2.099
Mean of logged Data	0.737	SD of logged Data	0.0387

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.155	95% Adjusted-CLT UCL (Chen-1995)	2.113
		95% Modified-t UCL (Johnson-1978)	2.15

Nonparametric Distribution Free UCLs

95% CLT UCL	2.143	95% Jackknife UCL	2.155
95% Standard Bootstrap UCL	2.139	95% Bootstrap-t UCL	2.133

95% Hall's Bootstrap UCL	2.121	95% Percentile Bootstrap UCL	2.129
95% BCA Bootstrap UCL	2.126		
90% Chebyshev(Mean, Sd) UCL	2.186	95% Chebyshev(Mean, Sd) UCL	2.23
97.5% Chebyshev(Mean, Sd) UCL	2.29	99% Chebyshev(Mean, Sd) UCL	2.409

Suggested UCL to Use

95% Student's-t UCL	2.155	or 95% Modified-t UCL	2.15

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.46	Mean	5.525
Maximum	8.03	Median	5.85
SD	2.418	Std. Error of Mean	0.987
Coefficient of Variation	0.438	Skewness	-0.292
Mean of logged Data	1.612	SD of logged Data	0.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.514	95% Adjusted-CLT UCL (Chen-1995)	7.023
		95% Modified-t UCL (Johnson-1978)	7.495

Nonparametric Distribution Free UCLs

95% CLT UCL	7.149	95% Jackknife UCL	7.514
95% Standard Bootstrap UCL	7.002	95% Bootstrap-t UCL	7.467
95% Hall's Bootstrap UCL	6.743	95% Percentile Bootstrap UCL	7.045
95% BCA Bootstrap UCL	6.833		
90% Chebyshev(Mean, Sd) UCL	8.487	95% Chebyshev(Mean, Sd) UCL	9.828
97.5% Chebyshev(Mean, Sd) UCL	11.69	99% Chebyshev(Mean, Sd) UCL	15.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.97	Mean	7.518
Maximum	11.2	Median	8.33
SD	3.457	Std. Error of Mean	1.411
Coefficient of Variation	0.46	Skewness	-0.409
Mean of logged Data	1.905	SD of logged Data	0.552

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.36	95% Adjusted-CLT UCL (Chen-1995)	9.587
		95% Modified-t UCL (Johnson-1978)	10.32

Nonparametric Distribution Free UCLs

95% CLT UCL	9.839	95% Jackknife UCL	10.36
95% Standard Bootstrap UCL	9.671	95% Bootstrap-t UCL	10.3
95% Hall's Bootstrap UCL	9.109	95% Percentile Bootstrap UCL	9.678
95% BCA Bootstrap UCL	9.382		
90% Chebyshev(Mean, Sd) UCL	11.75	95% Chebyshev(Mean, Sd) UCL	13.67
97.5% Chebyshev(Mean, Sd) UCL	16.33	99% Chebyshev(Mean, Sd) UCL	21.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.63	Mean	10.61
Maximum	15.2	Median	11.55
SD	4.581	Std. Error of Mean	1.87
Coefficient of Variation	0.432	Skewness	-0.414
Mean of logged Data	2.265	SD of logged Data	0.508

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.37	95% Adjusted-CLT UCL (Chen-1995)	13.34
		95% Modified-t UCL (Johnson-1978)	14.32

Nonparametric Distribution Free UCLs

95% CLT UCL	13.68	95% Jackknife UCL	14.37
95% Standard Bootstrap UCL	13.44	95% Bootstrap-t UCL	13.92
95% Hall's Bootstrap UCL	12.55	95% Percentile Bootstrap UCL	13.28
95% BCA Bootstrap UCL	13.13		
90% Chebyshev(Mean, Sd) UCL	16.22	95% Chebyshev(Mean, Sd) UCL	18.76
97.5% Chebyshev(Mean, Sd) UCL	22.29	99% Chebyshev(Mean, Sd) UCL	29.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.37	Mean	8.097
Maximum	11.5	Median	9.15
SD	3.357	Std. Error of Mean	1.37
Coefficient of Variation	0.415	Skewness	-0.585
Mean of logged Data	2	SD of logged Data	0.5

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.86	95% Adjusted-CLT UCL (Chen-1995)	10
		95% Modified-t UCL (Johnson-1978)	10.8

Nonparametric Distribution Free UCLs

95% CLT UCL	10.35	95% Jackknife UCL	10.86
95% Standard Bootstrap UCL	10.23	95% Bootstrap-t UCL	10.58
95% Hall's Bootstrap UCL	9.553	95% Percentile Bootstrap UCL	10.15
95% BCA Bootstrap UCL	9.817		
90% Chebyshev(Mean, Sd) UCL	12.21	95% Chebyshev(Mean, Sd) UCL	14.07
97.5% Chebyshev(Mean, Sd) UCL	16.65	99% Chebyshev(Mean, Sd) UCL	21.73

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.09	Mean	4.323
Maximum	7.05	Median	4.53
SD	1.916	Std. Error of Mean	0.782
Coefficient of Variation	0.443	Skewness	0.12
Mean of logged Data	1.371	SD of logged Data	0.488

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.899	95% Adjusted-CLT UCL (Chen-1995)	5.651
		95% Modified-t UCL (Johnson-1978)	5.906

Nonparametric Distribution Free UCLs

95% CLT UCL	5.61	95% Jackknife UCL	5.899
95% Standard Bootstrap UCL	5.507	95% Bootstrap-t UCL	5.936
95% Hall's Bootstrap UCL	5.466	95% Percentile Bootstrap UCL	5.48
95% BCA Bootstrap UCL	5.608		
90% Chebyshev(Mean, Sd) UCL	6.67	95% Chebyshev(Mean, Sd) UCL	7.732
97.5% Chebyshev(Mean, Sd) UCL	9.208	99% Chebyshev(Mean, Sd) UCL	12.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.78	Mean	8.617
Maximum	12.6	Median	9.135
SD	3.787	Std. Error of Mean	1.546
Coefficient of Variation	0.44	Skewness	-0.304
Mean of logged Data	2.055	SD of logged Data	0.511

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.73	95% Adjusted-CLT UCL (Chen-1995)	10.95
		95% Modified-t UCL (Johnson-1978)	11.7

Nonparametric Distribution Free UCLs

95% CLT UCL	11.16	95% Jackknife UCL	11.73
95% Standard Bootstrap UCL	10.9	95% Bootstrap-t UCL	11.62
95% Hall's Bootstrap UCL	10.41	95% Percentile Bootstrap UCL	10.96
95% BCA Bootstrap UCL	10.68		
90% Chebyshev(Mean, Sd) UCL	13.25	95% Chebyshev(Mean, Sd) UCL	15.36
97.5% Chebyshev(Mean, Sd) UCL	18.27	99% Chebyshev(Mean, Sd) UCL	24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.73	Mean	3.12
Maximum	3.285	Median	3.228
SD	0.223	Std. Error of Mean	0.0909
Coefficient of Variation	0.0714	Skewness	-1.402
Mean of logged Data	1.136	SD of logged Data	0.074

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.303	95% Adjusted-CLT UCL (Chen-1995)	3.214
		95% Modified-t UCL (Johnson-1978)	3.294

Nonparametric Distribution Free UCLs

95% CLT UCL	3.269	95% Jackknife UCL	3.303
95% Standard Bootstrap UCL	3.255	95% Bootstrap-t UCL	3.252
95% Hall's Bootstrap UCL	3.217	95% Percentile Bootstrap UCL	3.251
95% BCA Bootstrap UCL	3.239		
90% Chebyshev(Mean, Sd) UCL	3.393	95% Chebyshev(Mean, Sd) UCL	3.516
97.5% Chebyshev(Mean, Sd) UCL	3.688	99% Chebyshev(Mean, Sd) UCL	4.024

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.09	Mean	7.638
Maximum	12.3	Median	8.53
SD	4.276	Std. Error of Mean	1.746
Coefficient of Variation	0.56	Skewness	-0.404
Mean of logged Data	1.844	SD of logged Data	0.739

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.16	95% Adjusted-CLT UCL (Chen-1995)	10.2
		95% Modified-t UCL (Johnson-1978)	11.11

Nonparametric Distribution Free UCLs

95% CLT UCL	10.51	95% Jackknife UCL	11.16
95% Standard Bootstrap UCL	10.22	95% Bootstrap-t UCL	10.74
95% Hall's Bootstrap UCL	9.607	95% Percentile Bootstrap UCL	10.12
95% BCA Bootstrap UCL	10.01		
90% Chebyshev(Mean, Sd) UCL	12.88	95% Chebyshev(Mean, Sd) UCL	15.25
97.5% Chebyshev(Mean, Sd) UCL	18.54	99% Chebyshev(Mean, Sd) UCL	25.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.934	Mean	1.172
Maximum	1.31	Median	1.238
SD	0.159	Std. Error of Mean	0.0651
Coefficient of Variation	0.136	Skewness	-0.829
Mean of logged Data	0.151	SD of logged Data	0.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.303	95% Adjusted-CLT UCL (Chen-1995)	1.256
		95% Modified-t UCL (Johnson-1978)	1.3

Nonparametric Distribution Free UCLs

95% CLT UCL	1.279	95% Jackknife UCL	1.303
95% Standard Bootstrap UCL	1.271	95% Bootstrap-t UCL	1.287
95% Hall's Bootstrap UCL	1.24	95% Percentile Bootstrap UCL	1.262
95% BCA Bootstrap UCL	1.258		
90% Chebyshev(Mean, Sd) UCL	1.368	95% Chebyshev(Mean, Sd) UCL	1.456
97.5% Chebyshev(Mean, Sd) UCL	1.579	99% Chebyshev(Mean, Sd) UCL	1.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.93	Mean	7.363
Maximum	10.7	Median	8.34
SD	3.323	Std. Error of Mean	1.357
Coefficient of Variation	0.451	Skewness	-0.554
Mean of logged Data	1.885	SD of logged Data	0.551

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.1	95% Adjusted-CLT UCL (Chen-1995)	9.267
		95% Modified-t UCL (Johnson-1978)	10.05

Nonparametric Distribution Free UCLs

95% CLT UCL	9.595	95% Jackknife UCL	10.1
95% Standard Bootstrap UCL	9.408	95% Bootstrap-t UCL	9.893
95% Hall's Bootstrap UCL	8.745	95% Percentile Bootstrap UCL	9.345
95% BCA Bootstrap UCL	9.127		
90% Chebyshev(Mean, Sd) UCL	11.43	95% Chebyshev(Mean, Sd) UCL	13.28
97.5% Chebyshev(Mean, Sd) UCL	15.84	99% Chebyshev(Mean, Sd) UCL	20.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.82	Mean	5.887
Maximum	8.27	Median	5.535
SD	1.307	Std. Error of Mean	0.534
Coefficient of Variation	0.222	Skewness	1.465
Mean of logged Data	1.754	SD of logged Data	0.206

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.962	95% Adjusted-CLT UCL (Chen-1995)	7.106
		95% Modified-t UCL (Johnson-1978)	7.015

Nonparametric Distribution Free UCLs

95% CLT UCL	6.765	95% Jackknife UCL	6.962
95% Standard Bootstrap UCL	6.696	95% Bootstrap-t UCL	7.829
95% Hall's Bootstrap UCL	9.199	95% Percentile Bootstrap UCL	6.798
95% BCA Bootstrap UCL	7.01		
90% Chebyshev(Mean, Sd) UCL	7.488	95% Chebyshev(Mean, Sd) UCL	8.213
97.5% Chebyshev(Mean, Sd) UCL	9.22	99% Chebyshev(Mean, Sd) UCL	11.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.86	Mean	4.803
Maximum	6.43	Median	4.975
SD	1.584	Std. Error of Mean	0.646
Coefficient of Variation	0.33	Skewness	-0.201
Mean of logged Data	1.519	SD of logged Data	0.354

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.105	95% Adjusted-CLT UCL (Chen-1995)	5.809
		95% Modified-t UCL (Johnson-1978)	6.096

Nonparametric Distribution Free UCLs

95% CLT UCL	5.866	95% Jackknife UCL	6.105
95% Standard Bootstrap UCL	5.797	95% Bootstrap-t UCL	6.021
95% Hall's Bootstrap UCL	5.49	95% Percentile Bootstrap UCL	5.803
95% BCA Bootstrap UCL	5.803		
90% Chebyshev(Mean, Sd) UCL	6.742	95% Chebyshev(Mean, Sd) UCL	7.62
97.5% Chebyshev(Mean, Sd) UCL	8.84	99% Chebyshev(Mean, Sd) UCL	11.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.86	Mean	7.873
Maximum	12.4	Median	8.63
SD	4.131	Std. Error of Mean	1.686
Coefficient of Variation	0.525	Skewness	-0.328
Mean of logged Data	1.911	SD of logged Data	0.648

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.27	95% Adjusted-CLT UCL (Chen-1995)	10.4
		95% Modified-t UCL (Johnson-1978)	11.23

Nonparametric Distribution Free UCLs

95% CLT UCL	10.65	95% Jackknife UCL	11.27
95% Standard Bootstrap UCL	10.36	95% Bootstrap-t UCL	11.01
95% Hall's Bootstrap UCL	9.778	95% Percentile Bootstrap UCL	10.39
95% BCA Bootstrap UCL	10.19		
90% Chebyshev(Mean, Sd) UCL	12.93	95% Chebyshev(Mean, Sd) UCL	15.22

97.5% Chebyshev(Mean, Sd) UCL	18.4	99% Chebyshev(Mean, Sd) UCL	24.65

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:33:50 PM
From File	37019.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	15.6	Mean	16.38
Maximum	17.1	Median	16.5
SD	0.615	Std. Error of Mean	0.251
Coefficient of Variation	0.0375	Skewness	-0.376
Mean of logged Data	2.796	SD of logged Data	0.0377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.89	95% Adjusted-CLT UCL (Chen-1995)	16.75
		95% Modified-t UCL (Johnson-1978)	16.88

Nonparametric Distribution Free UCLs

95% CLT UCL	16.8	95% Jackknife UCL	16.89
95% Standard Bootstrap UCL	16.77	95% Bootstrap-t UCL	16.81
95% Hall's Bootstrap UCL	16.67	95% Percentile Bootstrap UCL	16.75
95% BCA Bootstrap UCL	16.77		
90% Chebyshev(Mean, Sd) UCL	17.14	95% Chebyshev(Mean, Sd) UCL	17.48
97.5% Chebyshev(Mean, Sd) UCL	17.95	99% Chebyshev(Mean, Sd) UCL	18.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.6	Mean	13.17
Maximum	14.2	Median	12.9
SD	0.609	Std. Error of Mean	0.249
Coefficient of Variation	0.0462	Skewness	1.217

Mean of logged Data	2.577	SD of logged Data	0.0454

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.67	95% Adjusted-CLT UCL (Chen-1995)	13.71
		95% Modified-t UCL (Johnson-1978)	13.69

Nonparametric Distribution Free UCLs

95% CLT UCL	13.58	95% Jackknife UCL	13.67
95% Standard Bootstrap UCL	13.54	95% Bootstrap-t UCL	14.95
95% Hall's Bootstrap UCL	17.19	95% Percentile Bootstrap UCL	13.57
95% BCA Bootstrap UCL	13.57		
90% Chebyshev(Mean, Sd) UCL	13.91	95% Chebyshev(Mean, Sd) UCL	14.25
97.5% Chebyshev(Mean, Sd) UCL	14.72	99% Chebyshev(Mean, Sd) UCL	15.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.7	Mean	57.23
Maximum	75.5	Median	53.95
SD	9.117	Std. Error of Mean	3.722
Coefficient of Variation	0.159	Skewness	2.255
Mean of logged Data	4.038	SD of logged Data	0.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.73	95% Adjusted-CLT UCL (Chen-1995)	67.02
		95% Modified-t UCL (Johnson-1978)	65.3

Nonparametric Distribution Free UCLs

95% CLT UCL	63.36	95% Jackknife UCL	64.73
95% Standard Bootstrap UCL	62.61	95% Bootstrap-t UCL	82.36
95% Hall's Bootstrap UCL	89.7	95% Percentile Bootstrap UCL	62.27
95% BCA Bootstrap UCL	65.23		
90% Chebyshev(Mean, Sd) UCL	68.4	95% Chebyshev(Mean, Sd) UCL	73.46
97.5% Chebyshev(Mean, Sd) UCL	80.48	99% Chebyshev(Mean, Sd) UCL	94.27

Suggested UCL to Use

95% Student's-t UCL	64.73	or 95% Modified-t UCL	65.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.781	Mean	0.97
Maximum	1.17	Median	0.97
SD	0.138	Std. Error of Mean	0.0616
Coefficient of Variation	0.142	Skewness	0.191
Mean of logged Data	-0.0384	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.102	95% Adjusted-CLT UCL (Chen-1995)	1.077
		95% Modified-t UCL (Johnson-1978)	1.102

Nonparametric Distribution Free UCLs

95% CLT UCL	1.072	95% Jackknife UCL	1.102
95% Standard Bootstrap UCL	1.059	95% Bootstrap-t UCL	1.085
95% Hall's Bootstrap UCL	1.103	95% Percentile Bootstrap UCL	1.053
95% BCA Bootstrap UCL	1.052		
90% Chebyshev(Mean, Sd) UCL	1.155	95% Chebyshev(Mean, Sd) UCL	1.239
97.5% Chebyshev(Mean, Sd) UCL	1.355	99% Chebyshev(Mean, Sd) UCL	1.583

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.427	Mean	0.496
Maximum	0.52	Median	0.51
SD	0.0357	Std. Error of Mean	0.0146
Coefficient of Variation	0.0721	Skewness	-1.904
Mean of logged Data	-0.704	SD of logged Data	0.0758

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.525	95% Adjusted-CLT UCL (Chen-1995)	0.508
		95% Modified-t UCL (Johnson-1978)	0.523

Nonparametric Distribution Free UCLs

95% CLT UCL	0.52	95% Jackknife UCL	0.525
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.539	95% Chebyshev(Mean, Sd) UCL	0.559
97.5% Chebyshev(Mean, Sd) UCL	0.587	99% Chebyshev(Mean, Sd) UCL	0.641

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.45	Mean	1.963
Maximum	2.115	Median	2.068
SD	0.256	Std. Error of Mean	0.105
Coefficient of Variation	0.131	Skewness	-2.257
Mean of logged Data	0.666	SD of logged Data	0.146

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.174	95% Adjusted-CLT UCL (Chen-1995)	2.032
		95% Modified-t UCL (Johnson-1978)	2.158

Nonparametric Distribution Free UCLs

95% CLT UCL	2.135	95% Jackknife UCL	2.174
95% Standard Bootstrap UCL	2.119	95% Bootstrap-t UCL	2.104
95% Hall's Bootstrap UCL	2.058	95% Percentile Bootstrap UCL	2.088
95% BCA Bootstrap UCL	2.073		
90% Chebyshev(Mean, Sd) UCL	2.277	95% Chebyshev(Mean, Sd) UCL	2.419
97.5% Chebyshev(Mean, Sd) UCL	2.617	99% Chebyshev(Mean, Sd) UCL	3.004

Suggested UCL to Use

95% Student's-t UCL	2.174	or 95% Modified-t UCL	2.158

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.84	Mean	8.535
Maximum	13.9	Median	9.865
SD	4.253	Std. Error of Mean	1.736
Coefficient of Variation	0.498	Skewness	-0.402
Mean of logged Data	2.003	SD of logged Data	0.631

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.03	95% Adjusted-CLT UCL (Chen-1995)	11.09
		95% Modified-t UCL (Johnson-1978)	11.99

Nonparametric Distribution Free UCLs

95% CLT UCL	11.39	95% Jackknife UCL	12.03
95% Standard Bootstrap UCL	11.09	95% Bootstrap-t UCL	11.7
95% Hall's Bootstrap UCL	10.72	95% Percentile Bootstrap UCL	11
95% BCA Bootstrap UCL	10.92		
90% Chebyshev(Mean, Sd) UCL	13.74	95% Chebyshev(Mean, Sd) UCL	16.1
97.5% Chebyshev(Mean, Sd) UCL	19.38	99% Chebyshev(Mean, Sd) UCL	25.81

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.34	Mean	9.402

Maximum	15.1	Median	10.98
SD	4.775	Std. Error of Mean	1.95
Coefficient of Variation	0.508	Skewness	-0.449
Mean of logged Data	2.093	SD of logged Data	0.642

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.33	95% Adjusted-CLT UCL (Chen-1995)	12.23
		95% Modified-t UCL (Johnson-1978)	13.27

Nonparametric Distribution Free UCLs

95% CLT UCL	12.61	95% Jackknife UCL	13.33
95% Standard Bootstrap UCL	12.26	95% Bootstrap-t UCL	12.67
95% Hall's Bootstrap UCL	11.81	95% Percentile Bootstrap UCL	12.23
95% BCA Bootstrap UCL	12.14		
90% Chebyshev(Mean, Sd) UCL	15.25	95% Chebyshev(Mean, Sd) UCL	17.9
97.5% Chebyshev(Mean, Sd) UCL	21.58	99% Chebyshev(Mean, Sd) UCL	28.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.7	Mean	13.93
Maximum	21.7	Median	16.45
SD	6.94	Std. Error of Mean	2.833
Coefficient of Variation	0.498	Skewness	-0.607
Mean of logged Data	2.487	SD of logged Data	0.644

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.63	95% Adjusted-CLT UCL (Chen-1995)	17.83
		95% Modified-t UCL (Johnson-1978)	19.52

Nonparametric Distribution Free UCLs

95% CLT UCL	18.59	95% Jackknife UCL	19.63

95% Standard Bootstrap UCL	18.2	95% Bootstrap-t UCL	19.31
95% Hall's Bootstrap UCL	17.11	95% Percentile Bootstrap UCL	18.2
95% BCA Bootstrap UCL	17.34		
90% Chebyshev(Mean, Sd) UCL	22.42	95% Chebyshev(Mean, Sd) UCL	26.27
97.5% Chebyshev(Mean, Sd) UCL	31.62	99% Chebyshev(Mean, Sd) UCL	42.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.48	Mean	7.543
Maximum	12.3	Median	8.7
SD	3.925	Std. Error of Mean	1.602
Coefficient of Variation	0.52	Skewness	-0.447
Mean of logged Data	1.863	SD of logged Data	0.669

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.77	95% Adjusted-CLT UCL (Chen-1995)	9.867
		95% Modified-t UCL (Johnson-1978)	10.72

Nonparametric Distribution Free UCLs

95% CLT UCL	10.18	95% Jackknife UCL	10.77
95% Standard Bootstrap UCL	9.937	95% Bootstrap-t UCL	10.33
95% Hall's Bootstrap UCL	9.459	95% Percentile Bootstrap UCL	9.983
95% BCA Bootstrap UCL	9.693		
90% Chebyshev(Mean, Sd) UCL	12.35	95% Chebyshev(Mean, Sd) UCL	14.53
97.5% Chebyshev(Mean, Sd) UCL	17.55	99% Chebyshev(Mean, Sd) UCL	23.49

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.19	Mean	6.208
Maximum	9.49	Median	7.345
SD	2.944	Std. Error of Mean	1.202
Coefficient of Variation	0.474	Skewness	-0.649
Mean of logged Data	1.695	SD of logged Data	0.606

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.631	95% Adjusted-CLT UCL (Chen-1995)	7.845
		95% Modified-t UCL (Johnson-1978)	8.577

Nonparametric Distribution Free UCLs

95% CLT UCL	8.186	95% Jackknife UCL	8.631
95% Standard Bootstrap UCL	7.996	95% Bootstrap-t UCL	8.308
95% Hall's Bootstrap UCL	7.531	95% Percentile Bootstrap UCL	7.922
95% BCA Bootstrap UCL	7.8		
90% Chebyshev(Mean, Sd) UCL	9.814	95% Chebyshev(Mean, Sd) UCL	11.45
97.5% Chebyshev(Mean, Sd) UCL	13.72	99% Chebyshev(Mean, Sd) UCL	18.17

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.1	Mean	12.13
Maximum	20.3	Median	13.8
SD	6.164	Std. Error of Mean	2.517
Coefficient of Variation	0.508	Skewness	-0.269
Mean of logged Data	2.352	SD of logged Data	0.633

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	17.2	95% Adjusted-CLT UCL (Chen-1995)	15.98
		95% Modified-t UCL (Johnson-1978)	17.16

Nonparametric Distribution Free UCLs

95% CLT UCL	16.27	95% Jackknife UCL	17.2
95% Standard Bootstrap UCL	15.92	95% Bootstrap-t UCL	16.8
95% Hall's Bootstrap UCL	15.41	95% Percentile Bootstrap UCL	15.82
95% BCA Bootstrap UCL	15.7		
90% Chebyshev(Mean, Sd) UCL	19.68	95% Chebyshev(Mean, Sd) UCL	23.1
97.5% Chebyshev(Mean, Sd) UCL	27.85	99% Chebyshev(Mean, Sd) UCL	37.17

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.9	Mean	3.132
Maximum	3.25	Median	3.18
SD	0.136	Std. Error of Mean	0.0555
Coefficient of Variation	0.0434	Skewness	-1.197
Mean of logged Data	1.141	SD of logged Data	0.0443

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.244	95% Adjusted-CLT UCL (Chen-1995)	3.194
		95% Modified-t UCL (Johnson-1978)	3.239

Nonparametric Distribution Free UCLs

95% CLT UCL	3.223	95% Jackknife UCL	3.244
95% Standard Bootstrap UCL	3.215	95% Bootstrap-t UCL	3.212
95% Hall's Bootstrap UCL	3.192	95% Percentile Bootstrap UCL	3.213
95% BCA Bootstrap UCL	3.202		
90% Chebyshev(Mean, Sd) UCL	3.298	95% Chebyshev(Mean, Sd) UCL	3.374
97.5% Chebyshev(Mean, Sd) UCL	3.478	99% Chebyshev(Mean, Sd) UCL	3.684

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.58	Mean	15.99
Maximum	24.8	Median	18.05
SD	7.519	Std. Error of Mean	3.069
Coefficient of Variation	0.47	Skewness	-0.523
Mean of logged Data	2.646	SD of logged Data	0.593

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.17	95% Adjusted-CLT UCL (Chen-1995)	20.34
		95% Modified-t UCL (Johnson-1978)	22.06

Nonparametric Distribution Free UCLs

95% CLT UCL	21.04	95% Jackknife UCL	22.17
95% Standard Bootstrap UCL	20.66	95% Bootstrap-t UCL	21.36
95% Hall's Bootstrap UCL	19.59	95% Percentile Bootstrap UCL	20.55
95% BCA Bootstrap UCL	20.1		
90% Chebyshev(Mean, Sd) UCL	25.2	95% Chebyshev(Mean, Sd) UCL	29.37
97.5% Chebyshev(Mean, Sd) UCL	35.16	99% Chebyshev(Mean, Sd) UCL	46.53

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.215	Mean	1.271
Maximum	1.3	Median	1.275
SD	0.0338	Std. Error of Mean	0.0151
Coefficient of Variation	0.0266	Skewness	-1.482
Mean of logged Data	0.24	SD of logged Data	0.0269

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.303	95% Adjusted-CLT UCL (Chen-1995)	1.285
		95% Modified-t UCL (Johnson-1978)	1.302

Nonparametric Distribution Free UCLs

95% CLT UCL	1.296	95% Jackknife UCL	1.303
95% Standard Bootstrap UCL	1.293	95% Bootstrap-t UCL	1.295
95% Hall's Bootstrap UCL	1.286	95% Percentile Bootstrap UCL	1.291
95% BCA Bootstrap UCL	1.288		
90% Chebyshev(Mean, Sd) UCL	1.316	95% Chebyshev(Mean, Sd) UCL	1.337
97.5% Chebyshev(Mean, Sd) UCL	1.365	99% Chebyshev(Mean, Sd) UCL	1.421

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.78	Mean	7.922
Maximum	12.3	Median	9.475
SD	3.899	Std. Error of Mean	1.592
Coefficient of Variation	0.492	Skewness	-0.631
Mean of logged Data	1.927	SD of logged Data	0.634

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.13	95% Adjusted-CLT UCL (Chen-1995)	10.1
		95% Modified-t UCL (Johnson-1978)	11.06

Nonparametric Distribution Free UCLs

95% CLT UCL	10.54	95% Jackknife UCL	11.13
95% Standard Bootstrap UCL	10.3	95% Bootstrap-t UCL	10.72
95% Hall's Bootstrap UCL	9.685	95% Percentile Bootstrap UCL	10.29
95% BCA Bootstrap UCL	10.08		
90% Chebyshev(Mean, Sd) UCL	12.7	95% Chebyshev(Mean, Sd) UCL	14.86
97.5% Chebyshev(Mean, Sd) UCL	17.86	99% Chebyshev(Mean, Sd) UCL	23.76

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.3	Mean	3.186
Maximum	4.63	Median	3.2
SD	0.905	Std. Error of Mean	0.405
Coefficient of Variation	0.284	Skewness	1.156
Mean of logged Data	1.129	SD of logged Data	0.27

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.049	95% Adjusted-CLT UCL (Chen-1995)	4.076
		95% Modified-t UCL (Johnson-1978)	4.084

Nonparametric Distribution Free UCLs

95% CLT UCL	3.852	95% Jackknife UCL	4.049
95% Standard Bootstrap UCL	3.777	95% Bootstrap-t UCL	4.571
95% Hall's Bootstrap UCL	6.293	95% Percentile Bootstrap UCL	3.802
95% BCA Bootstrap UCL	3.928		
90% Chebyshev(Mean, Sd) UCL	4.401	95% Chebyshev(Mean, Sd) UCL	4.951
97.5% Chebyshev(Mean, Sd) UCL	5.715	99% Chebyshev(Mean, Sd) UCL	7.215

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.18	Mean	6.523
Maximum	9.4	Median	7.52
SD	2.925	Std. Error of Mean	1.194
Coefficient of Variation	0.448	Skewness	-0.759
Mean of logged Data	1.757	SD of logged Data	0.583

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.93	95% Adjusted-CLT UCL (Chen-1995)	8.092
		95% Modified-t UCL (Johnson-1978)	8.868

Nonparametric Distribution Free UCLs

95% CLT UCL	8.488	95% Jackknife UCL	8.93
95% Standard Bootstrap UCL	8.273	95% Bootstrap-t UCL	8.657
95% Hall's Bootstrap UCL	7.787	95% Percentile Bootstrap UCL	8.242
95% BCA Bootstrap UCL	7.927		
90% Chebyshev(Mean, Sd) UCL	10.11	95% Chebyshev(Mean, Sd) UCL	11.73
97.5% Chebyshev(Mean, Sd) UCL	13.98	99% Chebyshev(Mean, Sd) UCL	18.41

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	5.42	Mean	15.43
Maximum	24.8	Median	17.5
SD	7.516	Std. Error of Mean	3.068
Coefficient of Variation	0.487	Skewness	-0.419
Mean of logged Data	2.603	SD of logged Data	0.61

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.61	95% Adjusted-CLT UCL (Chen-1995)	19.92
		95% Modified-t UCL (Johnson-1978)	21.53

Nonparametric Distribution Free UCLs

95% CLT UCL	20.48	95% Jackknife UCL	21.61
95% Standard Bootstrap UCL	19.93	95% Bootstrap-t UCL	21.13
95% Hall's Bootstrap UCL	19.32	95% Percentile Bootstrap UCL	19.93
95% BCA Bootstrap UCL	19.93		
90% Chebyshev(Mean, Sd) UCL	24.64	95% Chebyshev(Mean, Sd) UCL	28.81
97.5% Chebyshev(Mean, Sd) UCL	34.59	99% Chebyshev(Mean, Sd) UCL	45.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:35:03 PM
From File	39020.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.5	Mean	17.53
Maximum	19.9	Median	18.65
SD	2.576	Std. Error of Mean	1.052
Coefficient of Variation	0.147	Skewness	-0.982
Mean of logged Data	2.854	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.65	95% Adjusted-CLT UCL (Chen-1995)	18.81
		95% Modified-t UCL (Johnson-1978)	19.58

Nonparametric Distribution Free UCLs

95% CLT UCL	19.26	95% Jackknife UCL	19.65
95% Standard Bootstrap UCL	19.09	95% Bootstrap-t UCL	19.19
95% Hall's Bootstrap UCL	18.61	95% Percentile Bootstrap UCL	19.12
95% BCA Bootstrap UCL	18.87		
90% Chebyshev(Mean, Sd) UCL	20.69	95% Chebyshev(Mean, Sd) UCL	22.12
97.5% Chebyshev(Mean, Sd) UCL	24.1	99% Chebyshev(Mean, Sd) UCL	28

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.1	Mean	14.9
Maximum	17.7	Median	16.1
SD	2.717	Std. Error of Mean	1.109
Coefficient of Variation	0.182	Skewness	-0.774

Mean of logged Data	2.686	SD of logged Data	0.194

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.13	95% Adjusted-CLT UCL (Chen-1995)	16.35
		95% Modified-t UCL (Johnson-1978)	17.08

Nonparametric Distribution Free UCLs

95% CLT UCL	16.72	95% Jackknife UCL	17.13
95% Standard Bootstrap UCL	16.53	95% Bootstrap-t UCL	16.9
95% Hall's Bootstrap UCL	16.01	95% Percentile Bootstrap UCL	16.53
95% BCA Bootstrap UCL	16.35		
90% Chebyshev(Mean, Sd) UCL	18.23	95% Chebyshev(Mean, Sd) UCL	19.73
97.5% Chebyshev(Mean, Sd) UCL	21.83	99% Chebyshev(Mean, Sd) UCL	25.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43	Mean	52.12
Maximum	59.8	Median	52.4
SD	7.873	Std. Error of Mean	3.214
Coefficient of Variation	0.151	Skewness	-0.0712
Mean of logged Data	3.944	SD of logged Data	0.153

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.59	95% Adjusted-CLT UCL (Chen-1995)	57.3
		95% Modified-t UCL (Johnson-1978)	58.58

Nonparametric Distribution Free UCLs

95% CLT UCL	57.4	95% Jackknife UCL	58.59
95% Standard Bootstrap UCL	56.89	95% Bootstrap-t UCL	58.49
95% Hall's Bootstrap UCL	55.04	95% Percentile Bootstrap UCL	56.97
95% BCA Bootstrap UCL	56.8		

90% Chebyshev(Mean, Sd) UCL	61.76	95% Chebyshev(Mean, Sd) UCL	66.13
97.5% Chebyshev(Mean, Sd) UCL	72.19	99% Chebyshev(Mean, Sd) UCL	84.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.94	Mean	0.972
Maximum	0.99	Median	0.978
SD	0.0186	Std. Error of Mean	0.0076
Coefficient of Variation	0.0192	Skewness	-1.125
Mean of logged Data	-0.0289	SD of logged Data	0.0193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.987	95% Adjusted-CLT UCL (Chen-1995)	0.98
		95% Modified-t UCL (Johnson-1978)	0.986

Nonparametric Distribution Free UCLs

95% CLT UCL	0.984	95% Jackknife UCL	0.987
95% Standard Bootstrap UCL	0.983	95% Bootstrap-t UCL	0.983
95% Hall's Bootstrap UCL	0.98	95% Percentile Bootstrap UCL	0.983
95% BCA Bootstrap UCL	0.981		
90% Chebyshev(Mean, Sd) UCL	0.994	95% Chebyshev(Mean, Sd) UCL	1.005
97.5% Chebyshev(Mean, Sd) UCL	1.019	99% Chebyshev(Mean, Sd) UCL	1.047

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	0.5	Mean	1.249
Maximum	4.91	Median	0.523
SD	1.793	Std. Error of Mean	0.732
Coefficient of Variation	1.436	Skewness	2.449
Mean of logged Data	-0.285	SD of logged Data	0.919

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.725	95% Adjusted-CLT UCL (Chen-1995)	3.236
		95% Modified-t UCL (Johnson-1978)	2.847

Nonparametric Distribution Free UCLs

95% CLT UCL	2.453	95% Jackknife UCL	2.725
95% Standard Bootstrap UCL	2.332	95% Bootstrap-t UCL	174.2
95% Hall's Bootstrap UCL	105.8	95% Percentile Bootstrap UCL	2.711
95% BCA Bootstrap UCL	2.717		
90% Chebyshev(Mean, Sd) UCL	3.446	95% Chebyshev(Mean, Sd) UCL	4.441
97.5% Chebyshev(Mean, Sd) UCL	5.822	99% Chebyshev(Mean, Sd) UCL	8.534

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.441

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	2.695
Maximum	4.03	Median	2.253
SD	0.861	Std. Error of Mean	0.351
Coefficient of Variation	0.319	Skewness	1.033
Mean of logged Data	0.953	SD of logged Data	0.298

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.403	95% Adjusted-CLT UCL (Chen-1995)	3.431
		95% Modified-t UCL (Johnson-1978)	3.428

Nonparametric Distribution Free UCLs

95% CLT UCL	3.273	95% Jackknife UCL	3.403
95% Standard Bootstrap UCL	3.221	95% Bootstrap-t UCL	5.433

95% Hall's Bootstrap UCL	8.812	95% Percentile Bootstrap UCL	3.262
95% BCA Bootstrap UCL	3.347		
90% Chebyshev(Mean, Sd) UCL	3.749	95% Chebyshev(Mean, Sd) UCL	4.227
97.5% Chebyshev(Mean, Sd) UCL	4.89	99% Chebyshev(Mean, Sd) UCL	6.192

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.7	Mean	20.48
Maximum	33.4	Median	19.45
SD	9.412	Std. Error of Mean	3.842
Coefficient of Variation	0.459	Skewness	0.313
Mean of logged Data	2.927	SD of logged Data	0.475

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.23	95% Adjusted-CLT UCL (Chen-1995)	27.33
		95% Modified-t UCL (Johnson-1978)	28.31

Nonparametric Distribution Free UCLs

95% CLT UCL	26.8	95% Jackknife UCL	28.23
95% Standard Bootstrap UCL	26.1	95% Bootstrap-t UCL	29.63
95% Hall's Bootstrap UCL	24.5	95% Percentile Bootstrap UCL	26.4
95% BCA Bootstrap UCL	26.42		
90% Chebyshev(Mean, Sd) UCL	32.01	95% Chebyshev(Mean, Sd) UCL	37.23
97.5% Chebyshev(Mean, Sd) UCL	44.48	99% Chebyshev(Mean, Sd) UCL	58.71

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.8	Mean	30.97
Maximum	47.1	Median	28.95
SD	12.02	Std. Error of Mean	4.907

Coefficient of Variation	0.388	Skewness	0.296
Mean of logged Data	3.368	SD of logged Data	0.395

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.85	95% Adjusted-CLT UCL (Chen-1995)	39.67
		95% Modified-t UCL (Johnson-1978)	40.95

Nonparametric Distribution Free UCLs

95% CLT UCL	39.04	95% Jackknife UCL	40.85
95% Standard Bootstrap UCL	38.57	95% Bootstrap-t UCL	44.45
95% Hall's Bootstrap UCL	35.74	95% Percentile Bootstrap UCL	38.78
95% BCA Bootstrap UCL	38.78		
90% Chebyshev(Mean, Sd) UCL	45.69	95% Chebyshev(Mean, Sd) UCL	52.36
97.5% Chebyshev(Mean, Sd) UCL	61.61	99% Chebyshev(Mean, Sd) UCL	79.79

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	25.4	Mean	41.58
Maximum	67.1	Median	38.3
SD	17.78	Std. Error of Mean	7.259
Coefficient of Variation	0.428	Skewness	0.443
Mean of logged Data	3.65	SD of logged Data	0.432

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.21	95% Adjusted-CLT UCL (Chen-1995)	54.93
		95% Modified-t UCL (Johnson-1978)	56.43

Nonparametric Distribution Free UCLs

95% CLT UCL	53.52	95% Jackknife UCL	56.21
95% Standard Bootstrap UCL	52.46	95% Bootstrap-t UCL	58.15
95% Hall's Bootstrap UCL	49.57	95% Percentile Bootstrap UCL	53.03
95% BCA Bootstrap UCL	52.4		
90% Chebyshev(Mean, Sd) UCL	63.36	95% Chebyshev(Mean, Sd) UCL	73.22
97.5% Chebyshev(Mean, Sd) UCL	86.91	99% Chebyshev(Mean, Sd) UCL	113.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.1	Mean	26.73
Maximum	41.5	Median	24.15
SD	10.68	Std. Error of Mean	4.361
Coefficient of Variation	0.4	Skewness	0.445
Mean of logged Data	3.219	SD of logged Data	0.4

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.52	95% Adjusted-CLT UCL (Chen-1995)	34.75
		95% Modified-t UCL (Johnson-1978)	35.65

Nonparametric Distribution Free UCLs

95% CLT UCL	33.91	95% Jackknife UCL	35.52
95% Standard Bootstrap UCL	33.43	95% Bootstrap-t UCL	35.49
95% Hall's Bootstrap UCL	32.1	95% Percentile Bootstrap UCL	33.4
95% BCA Bootstrap UCL	33.53		
90% Chebyshev(Mean, Sd) UCL	39.82	95% Chebyshev(Mean, Sd) UCL	45.74
97.5% Chebyshev(Mean, Sd) UCL	53.97	99% Chebyshev(Mean, Sd) UCL	70.12

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.4	Mean	15.2
Maximum	24	Median	13.98
SD	6.458	Std. Error of Mean	2.637
Coefficient of Variation	0.425	Skewness	0.343
Mean of logged Data	2.643	SD of logged Data	0.433

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.51	95% Adjusted-CLT UCL (Chen-1995)	19.93
		95% Modified-t UCL (Johnson-1978)	20.57

Nonparametric Distribution Free UCLs

95% CLT UCL	19.53	95% Jackknife UCL	20.51
95% Standard Bootstrap UCL	19.12	95% Bootstrap-t UCL	20.83
95% Hall's Bootstrap UCL	17.79	95% Percentile Bootstrap UCL	19.28
95% BCA Bootstrap UCL	19.46		
90% Chebyshev(Mean, Sd) UCL	23.11	95% Chebyshev(Mean, Sd) UCL	26.69
97.5% Chebyshev(Mean, Sd) UCL	31.66	99% Chebyshev(Mean, Sd) UCL	41.43

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.6	Mean	26.42
Maximum	43	Median	24.8
SD	11.56	Std. Error of Mean	4.719
Coefficient of Variation	0.438	Skewness	0.415
Mean of logged Data	3.192	SD of logged Data	0.444

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.93	95% Adjusted-CLT UCL (Chen-1995)	35.03
		95% Modified-t UCL (Johnson-1978)	36.06

Nonparametric Distribution Free UCLs

95% CLT UCL	34.18	95% Jackknife UCL	35.93
95% Standard Bootstrap UCL	33.48	95% Bootstrap-t UCL	38.22
95% Hall's Bootstrap UCL	31.71	95% Percentile Bootstrap UCL	33.77
95% BCA Bootstrap UCL	33.62		
90% Chebyshev(Mean, Sd) UCL	40.57	95% Chebyshev(Mean, Sd) UCL	46.99
97.5% Chebyshev(Mean, Sd) UCL	55.89	99% Chebyshev(Mean, Sd) UCL	73.37

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.33	Mean	6.112
Maximum	10.1	Median	5.775
SD	2.821	Std. Error of Mean	1.152
Coefficient of Variation	0.462	Skewness	0.38
Mean of logged Data	1.717	SD of logged Data	0.478

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.432	95% Adjusted-CLT UCL (Chen-1995)	8.197
		95% Modified-t UCL (Johnson-1978)	8.462

Nonparametric Distribution Free UCLs

95% CLT UCL	8.006	95% Jackknife UCL	8.432
95% Standard Bootstrap UCL	7.885	95% Bootstrap-t UCL	8.61
95% Hall's Bootstrap UCL	7.699	95% Percentile Bootstrap UCL	7.878
95% BCA Bootstrap UCL	8.062		
90% Chebyshev(Mean, Sd) UCL	9.566	95% Chebyshev(Mean, Sd) UCL	11.13
97.5% Chebyshev(Mean, Sd) UCL	13.3	99% Chebyshev(Mean, Sd) UCL	17.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.6	Mean	35.37
Maximum	59	Median	31.4
SD	16.61	Std. Error of Mean	6.78
Coefficient of Variation	0.47	Skewness	0.466
Mean of logged Data	3.472	SD of logged Data	0.476

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.03	95% Adjusted-CLT UCL (Chen-1995)	47.9
		95% Modified-t UCL (Johnson-1978)	49.24

Nonparametric Distribution Free UCLs

95% CLT UCL	46.52	95% Jackknife UCL	49.03
95% Standard Bootstrap UCL	45.3	95% Bootstrap-t UCL	49.65
95% Hall's Bootstrap UCL	42.7	95% Percentile Bootstrap UCL	46.2
95% BCA Bootstrap UCL	46.2		
90% Chebyshev(Mean, Sd) UCL	55.71	95% Chebyshev(Mean, Sd) UCL	64.92
97.5% Chebyshev(Mean, Sd) UCL	77.71	99% Chebyshev(Mean, Sd) UCL	102.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.255	Mean	1.298
Maximum	1.325	Median	1.308
SD	0.026	Std. Error of Mean	0.0106
Coefficient of Variation	0.02	Skewness	-1.058
Mean of logged Data	0.261	SD of logged Data	0.0202

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.32	95% Adjusted-CLT UCL (Chen-1995)	1.311
		95% Modified-t UCL (Johnson-1978)	1.319

Nonparametric Distribution Free UCLs

95% CLT UCL	1.316	95% Jackknife UCL	1.32
95% Standard Bootstrap UCL	1.314	95% Bootstrap-t UCL	1.316
95% Hall's Bootstrap UCL	1.31	95% Percentile Bootstrap UCL	1.313
95% BCA Bootstrap UCL	1.311		
90% Chebyshev(Mean, Sd) UCL	1.33	95% Chebyshev(Mean, Sd) UCL	1.345
97.5% Chebyshev(Mean, Sd) UCL	1.365	99% Chebyshev(Mean, Sd) UCL	1.404

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16	Mean	26.97
Maximum	41.9	Median	25.7
SD	11.25	Std. Error of Mean	4.592
Coefficient of Variation	0.417	Skewness	0.257
Mean of logged Data	3.219	SD of logged Data	0.429

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.22	95% Adjusted-CLT UCL (Chen-1995)	35.03
		95% Modified-t UCL (Johnson-1978)	36.3

Nonparametric Distribution Free UCLs

95% CLT UCL	34.52	95% Jackknife UCL	36.22
95% Standard Bootstrap UCL	33.83	95% Bootstrap-t UCL	37.6
95% Hall's Bootstrap UCL	31.8	95% Percentile Bootstrap UCL	33.98
95% BCA Bootstrap UCL	34.17		
90% Chebyshev(Mean, Sd) UCL	40.74	95% Chebyshev(Mean, Sd) UCL	46.98
97.5% Chebyshev(Mean, Sd) UCL	55.65	99% Chebyshev(Mean, Sd) UCL	72.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.94	Mean	3.598
Maximum	4.96	Median	4.898
SD	2.052	Std. Error of Mean	0.838
Coefficient of Variation	0.57	Skewness	-0.968
Mean of logged Data	1.045	SD of logged Data	0.85

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.286	95% Adjusted-CLT UCL (Chen-1995)	4.622
		95% Modified-t UCL (Johnson-1978)	5.231

Nonparametric Distribution Free UCLs

95% CLT UCL	4.976	95% Jackknife UCL	5.286
95% Standard Bootstrap UCL	4.827	95% Bootstrap-t UCL	4.923
95% Hall's Bootstrap UCL	4.435	95% Percentile Bootstrap UCL	4.923
95% BCA Bootstrap UCL	4.91		
90% Chebyshev(Mean, Sd) UCL	6.111	95% Chebyshev(Mean, Sd) UCL	7.249
97.5% Chebyshev(Mean, Sd) UCL	8.829	99% Chebyshev(Mean, Sd) UCL	11.93

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.249

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.7	Mean	12.22
Maximum	21.4	Median	10.1
SD	6.501	Std. Error of Mean	2.654
Coefficient of Variation	0.532	Skewness	0.562
Mean of logged Data	2.383	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.57	95% Adjusted-CLT UCL (Chen-1995)	17.24
		95% Modified-t UCL (Johnson-1978)	17.67

Nonparametric Distribution Free UCLs

95% CLT UCL	16.59	95% Jackknife UCL	17.57
95% Standard Bootstrap UCL	16.16	95% Bootstrap-t UCL	18.56
95% Hall's Bootstrap UCL	14.83	95% Percentile Bootstrap UCL	16.26
95% BCA Bootstrap UCL	16.51		
90% Chebyshev(Mean, Sd) UCL	20.18	95% Chebyshev(Mean, Sd) UCL	23.79
97.5% Chebyshev(Mean, Sd) UCL	28.8	99% Chebyshev(Mean, Sd) UCL	38.63

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.2	Mean	36.07
Maximum	58.9	Median	32.5
SD	16.13	Std. Error of Mean	6.585
Coefficient of Variation	0.447	Skewness	0.432
Mean of logged Data	3.5	SD of logged Data	0.453

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.34	95% Adjusted-CLT UCL (Chen-1995)	48.14
		95% Modified-t UCL (Johnson-1978)	49.53

Nonparametric Distribution Free UCLs

95% CLT UCL	46.9	95% Jackknife UCL	49.34
95% Standard Bootstrap UCL	46.12	95% Bootstrap-t UCL	50.64
95% Hall's Bootstrap UCL	43	95% Percentile Bootstrap UCL	46.07
95% BCA Bootstrap UCL	45.82		
90% Chebyshev(Mean, Sd) UCL	55.82	95% Chebyshev(Mean, Sd) UCL	64.77
97.5% Chebyshev(Mean, Sd) UCL	77.19	99% Chebyshev(Mean, Sd) UCL	101.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:36:14 PM
From File	39038.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.2	Mean	16.38
Maximum	21	Median	15.65
SD	3.002	Std. Error of Mean	1.226
Coefficient of Variation	0.183	Skewness	0.73
Mean of logged Data	2.783	SD of logged Data	0.178

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.85	95% Adjusted-CLT UCL (Chen-1995)	18.79
		95% Modified-t UCL (Johnson-1978)	18.91

Nonparametric Distribution Free UCLs

95% CLT UCL	18.4	95% Jackknife UCL	18.85
95% Standard Bootstrap UCL	18.23	95% Bootstrap-t UCL	21.18
95% Hall's Bootstrap UCL	35.9	95% Percentile Bootstrap UCL	18.3
95% BCA Bootstrap UCL	18.52		
90% Chebyshev(Mean, Sd) UCL	20.06	95% Chebyshev(Mean, Sd) UCL	21.73
97.5% Chebyshev(Mean, Sd) UCL	24.04	99% Chebyshev(Mean, Sd) UCL	28.58

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.6	Mean	12.13
Maximum	16.4	Median	11.7
SD	2.324	Std. Error of Mean	0.949
Coefficient of Variation	0.192	Skewness	1.408
Mean of logged Data	2.482	SD of logged Data	0.18

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.05	95% Adjusted-CLT UCL (Chen-1995)	14.28
		95% Modified-t UCL (Johnson-1978)	14.14

Nonparametric Distribution Free UCLs

95% CLT UCL	13.69	95% Jackknife UCL	14.05
95% Standard Bootstrap UCL	13.56	95% Bootstrap-t UCL	15.11
95% Hall's Bootstrap UCL	22.73	95% Percentile Bootstrap UCL	13.7
95% BCA Bootstrap UCL	14.03		
90% Chebyshev(Mean, Sd) UCL	14.98	95% Chebyshev(Mean, Sd) UCL	16.27
97.5% Chebyshev(Mean, Sd) UCL	18.06	99% Chebyshev(Mean, Sd) UCL	21.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.7	Mean	45.5
Maximum	49.6	Median	46.1
SD	3.541	Std. Error of Mean	1.446
Coefficient of Variation	0.0778	Skewness	-0.783
Mean of logged Data	3.815	SD of logged Data	0.0798

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.41	95% Adjusted-CLT UCL (Chen-1995)	47.38
		95% Modified-t UCL (Johnson-1978)	48.34

Nonparametric Distribution Free UCLs

95% CLT UCL	47.88	95% Jackknife UCL	48.41
95% Standard Bootstrap UCL	47.68	95% Bootstrap-t UCL	47.93
95% Hall's Bootstrap UCL	47.44	95% Percentile Bootstrap UCL	47.6
95% BCA Bootstrap UCL	47.15		
90% Chebyshev(Mean, Sd) UCL	49.84	95% Chebyshev(Mean, Sd) UCL	51.8
97.5% Chebyshev(Mean, Sd) UCL	54.53	99% Chebyshev(Mean, Sd) UCL	59.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.765	Mean	1.539
Maximum	3.39	Median	1.225
SD	0.94	Std. Error of Mean	0.384
Coefficient of Variation	0.611	Skewness	2.068
Mean of logged Data	0.313	SD of logged Data	0.5

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.312	95% Adjusted-CLT UCL (Chen-1995)	2.517
		95% Modified-t UCL (Johnson-1978)	2.366

Nonparametric Distribution Free UCLs

95% CLT UCL	2.17	95% Jackknife UCL	2.312
95% Standard Bootstrap UCL	2.114	95% Bootstrap-t UCL	3.707
95% Hall's Bootstrap UCL	5.566	95% Percentile Bootstrap UCL	2.193
95% BCA Bootstrap UCL	2.393		
90% Chebyshev(Mean, Sd) UCL	2.69	95% Chebyshev(Mean, Sd) UCL	3.212
97.5% Chebyshev(Mean, Sd) UCL	3.936	99% Chebyshev(Mean, Sd) UCL	5.358

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.515	Mean	1.824
Maximum	4.8	Median	1.59
SD	1.557	Std. Error of Mean	0.636
Coefficient of Variation	0.854	Skewness	1.781
Mean of logged Data	0.328	SD of logged Data	0.806

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.105	95% Adjusted-CLT UCL (Chen-1995)	3.363
		95% Modified-t UCL (Johnson-1978)	3.182

Nonparametric Distribution Free UCLs

95% CLT UCL	2.869	95% Jackknife UCL	3.105
95% Standard Bootstrap UCL	2.791	95% Bootstrap-t UCL	4
95% Hall's Bootstrap UCL	7.478	95% Percentile Bootstrap UCL	2.899
95% BCA Bootstrap UCL	3.11		
90% Chebyshev(Mean, Sd) UCL	3.731	95% Chebyshev(Mean, Sd) UCL	4.594
97.5% Chebyshev(Mean, Sd) UCL	5.793	99% Chebyshev(Mean, Sd) UCL	8.148

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.59	Mean	5.272
Maximum	10.7	Median	4.425
SD	3.181	Std. Error of Mean	1.298
Coefficient of Variation	0.603	Skewness	1.003
Mean of logged Data	1.501	SD of logged Data	0.647

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.888	95% Adjusted-CLT UCL (Chen-1995)	7.976
		95% Modified-t UCL (Johnson-1978)	7.977

Nonparametric Distribution Free UCLs

95% CLT UCL	7.408	95% Jackknife UCL	7.888
95% Standard Bootstrap UCL	7.221	95% Bootstrap-t UCL	9.954
95% Hall's Bootstrap UCL	24.2	95% Percentile Bootstrap UCL	7.333
95% BCA Bootstrap UCL	7.77		
90% Chebyshev(Mean, Sd) UCL	9.167	95% Chebyshev(Mean, Sd) UCL	10.93
97.5% Chebyshev(Mean, Sd) UCL	13.38	99% Chebyshev(Mean, Sd) UCL	18.19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.2	Mean	41.95
Maximum	91.2	Median	36.75
SD	26.35	Std. Error of Mean	10.76
Coefficient of Variation	0.628	Skewness	1.574
Mean of logged Data	3.587	SD of logged Data	0.595

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.63	95% Adjusted-CLT UCL (Chen-1995)	67.03
		95% Modified-t UCL (Johnson-1978)	64.78

Nonparametric Distribution Free UCLs

95% CLT UCL	59.65	95% Jackknife UCL	63.63
95% Standard Bootstrap UCL	58.7	95% Bootstrap-t UCL	79.53
95% Hall's Bootstrap UCL	144.3	95% Percentile Bootstrap UCL	59.55
95% BCA Bootstrap UCL	64.48		
90% Chebyshev(Mean, Sd) UCL	74.22	95% Chebyshev(Mean, Sd) UCL	88.84
97.5% Chebyshev(Mean, Sd) UCL	109.1	99% Chebyshev(Mean, Sd) UCL	149

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.5	Mean	50.8
Maximum	112	Median	43.15
SD	32.29	Std. Error of Mean	13.18
Coefficient of Variation	0.636	Skewness	1.688
Mean of logged Data	3.779	SD of logged Data	0.59

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	77.37	95% Adjusted-CLT UCL (Chen-1995)	82.19
		95% Modified-t UCL (Johnson-1978)	78.88

Nonparametric Distribution Free UCLs

95% CLT UCL	72.49	95% Jackknife UCL	77.37
95% Standard Bootstrap UCL	71.11	95% Bootstrap-t UCL	102.4
95% Hall's Bootstrap UCL	175.4	95% Percentile Bootstrap UCL	71.27
95% BCA Bootstrap UCL	79.25		
90% Chebyshev(Mean, Sd) UCL	90.35	95% Chebyshev(Mean, Sd) UCL	108.3
97.5% Chebyshev(Mean, Sd) UCL	133.1	99% Chebyshev(Mean, Sd) UCL	182

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	25.1	Mean	65.2
Maximum	133	Median	59.85
SD	37.09	Std. Error of Mean	15.14
Coefficient of Variation	0.569	Skewness	1.381
Mean of logged Data	4.05	SD of logged Data	0.556

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	95.71	95% Adjusted-CLT UCL (Chen-1995)	99.22
		95% Modified-t UCL (Johnson-1978)	97.13

Nonparametric Distribution Free UCLs

95% CLT UCL	90.1	95% Jackknife UCL	95.71
95% Standard Bootstrap UCL	87.8	95% Bootstrap-t UCL	112.7
95% Hall's Bootstrap UCL	214.5	95% Percentile Bootstrap UCL	89.58
95% BCA Bootstrap UCL	93.67		
90% Chebyshev(Mean, Sd) UCL	110.6	95% Chebyshev(Mean, Sd) UCL	131.2
97.5% Chebyshev(Mean, Sd) UCL	159.8	99% Chebyshev(Mean, Sd) UCL	215.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13	Mean	35.48
Maximum	71.4	Median	32.05
SD	19.84	Std. Error of Mean	8.1
Coefficient of Variation	0.559	Skewness	1.289
Mean of logged Data	3.441	SD of logged Data	0.562

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.8	95% Adjusted-CLT UCL (Chen-1995)	53.36
		95% Modified-t UCL (Johnson-1978)	52.51

Nonparametric Distribution Free UCLs

95% CLT UCL	48.81	95% Jackknife UCL	51.8
95% Standard Bootstrap UCL	47.49	95% Bootstrap-t UCL	60.52
95% Hall's Bootstrap UCL	122.2	95% Percentile Bootstrap UCL	48.55
95% BCA Bootstrap UCL	52.93		
90% Chebyshev(Mean, Sd) UCL	59.78	95% Chebyshev(Mean, Sd) UCL	70.79
97.5% Chebyshev(Mean, Sd) UCL	86.07	99% Chebyshev(Mean, Sd) UCL	116.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.45	Mean	25.91
Maximum	56.6	Median	22.35
SD	16.26	Std. Error of Mean	6.636
Coefficient of Variation	0.627	Skewness	1.652
Mean of logged Data	3.108	SD of logged Data	0.587

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.28	95% Adjusted-CLT UCL (Chen-1995)	41.61

		95% Modified-t UCL (Johnson-1978)	40.03

Nonparametric Distribution Free UCLs

95% CLT UCL	36.82	95% Jackknife UCL	39.28
95% Standard Bootstrap UCL	36.1	95% Bootstrap-t UCL	48.72
95% Hall's Bootstrap UCL	89.21	95% Percentile Bootstrap UCL	36.07
95% BCA Bootstrap UCL	38.95		
90% Chebyshev(Mean, Sd) UCL	45.82	95% Chebyshev(Mean, Sd) UCL	54.84
97.5% Chebyshev(Mean, Sd) UCL	67.35	99% Chebyshev(Mean, Sd) UCL	91.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.7	Mean	56.6
Maximum	128	Median	48.75
SD	37.3	Std. Error of Mean	15.23
Coefficient of Variation	0.659	Skewness	1.778
Mean of logged Data	3.881	SD of logged Data	0.598

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	87.29	95% Adjusted-CLT UCL (Chen-1995)	93.46
		95% Modified-t UCL (Johnson-1978)	89.13

Nonparametric Distribution Free UCLs

95% CLT UCL	81.65	95% Jackknife UCL	87.29
95% Standard Bootstrap UCL	79.69	95% Bootstrap-t UCL	116.8
95% Hall's Bootstrap UCL	196	95% Percentile Bootstrap UCL	81.82
95% BCA Bootstrap UCL	89.98		
90% Chebyshev(Mean, Sd) UCL	102.3	95% Chebyshev(Mean, Sd) UCL	123
97.5% Chebyshev(Mean, Sd) UCL	151.7	99% Chebyshev(Mean, Sd) UCL	208.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.13	Mean	9.408
Maximum	21.2	Median	8.115
SD	6.188	Std. Error of Mean	2.526
Coefficient of Variation	0.658	Skewness	1.72
Mean of logged Data	2.081	SD of logged Data	0.619

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.5	95% Adjusted-CLT UCL (Chen-1995)	15.46
		95% Modified-t UCL (Johnson-1978)	14.79

Nonparametric Distribution Free UCLs

95% CLT UCL	13.56	95% Jackknife UCL	14.5
95% Standard Bootstrap UCL	13.18	95% Bootstrap-t UCL	18.54
95% Hall's Bootstrap UCL	34.09	95% Percentile Bootstrap UCL	13.77
95% BCA Bootstrap UCL	14.62		
90% Chebyshev(Mean, Sd) UCL	16.99	95% Chebyshev(Mean, Sd) UCL	20.42
97.5% Chebyshev(Mean, Sd) UCL	25.18	99% Chebyshev(Mean, Sd) UCL	34.54

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	25.3	Mean	68.88
Maximum	139	Median	61.05
SD	39.15	Std. Error of Mean	15.98
Coefficient of Variation	0.568	Skewness	1.248
Mean of logged Data	4.1	SD of logged Data	0.57

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	101.1	95% Adjusted-CLT UCL (Chen-1995)	103.9
		95% Modified-t UCL (Johnson-1978)	102.4

Nonparametric Distribution Free UCLs

95% CLT UCL	95.17	95% Jackknife UCL	101.1

95% Standard Bootstrap UCL	93.26	95% Bootstrap-t UCL	121.4
95% Hall's Bootstrap UCL	260	95% Percentile Bootstrap UCL	94.25
95% BCA Bootstrap UCL	100.2		
90% Chebyshev(Mean, Sd) UCL	116.8	95% Chebyshev(Mean, Sd) UCL	138.5
97.5% Chebyshev(Mean, Sd) UCL	168.7	99% Chebyshev(Mean, Sd) UCL	227.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.285	Mean	1.324
Maximum	1.38	Median	1.323
SD	0.0322	Std. Error of Mean	0.0131
Coefficient of Variation	0.0243	Skewness	0.961
Mean of logged Data	0.281	SD of logged Data	0.0241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.351	95% Adjusted-CLT UCL (Chen-1995)	1.351
		95% Modified-t UCL (Johnson-1978)	1.351

Nonparametric Distribution Free UCLs

95% CLT UCL	1.346	95% Jackknife UCL	1.351
95% Standard Bootstrap UCL	1.344	95% Bootstrap-t UCL	1.357
95% Hall's Bootstrap UCL	1.384	95% Percentile Bootstrap UCL	1.344
95% BCA Bootstrap UCL	1.347		
90% Chebyshev(Mean, Sd) UCL	1.364	95% Chebyshev(Mean, Sd) UCL	1.381
97.5% Chebyshev(Mean, Sd) UCL	1.406	99% Chebyshev(Mean, Sd) UCL	1.455

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.1	Mean	42.4
Maximum	86.8	Median	37.85

SD	24.15	Std. Error of Mean	9.858
Coefficient of Variation	0.57	Skewness	1.42
Mean of logged Data	3.62	SD of logged Data	0.555

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.26	95% Adjusted-CLT UCL (Chen-1995)	64.72
		95% Modified-t UCL (Johnson-1978)	63.22

Nonparametric Distribution Free UCLs

95% CLT UCL	58.62	95% Jackknife UCL	62.26
95% Standard Bootstrap UCL	57.24	95% Bootstrap-t UCL	74.45
95% Hall's Bootstrap UCL	138.1	95% Percentile Bootstrap UCL	58.72
95% BCA Bootstrap UCL	62.38		
90% Chebyshev(Mean, Sd) UCL	71.97	95% Chebyshev(Mean, Sd) UCL	85.37
97.5% Chebyshev(Mean, Sd) UCL	104	99% Chebyshev(Mean, Sd) UCL	140.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.35	Mean	3.668
Maximum	10.2	Median	2.725
SD	3.293	Std. Error of Mean	1.344
Coefficient of Variation	0.898	Skewness	2.147
Mean of logged Data	1.053	SD of logged Data	0.716

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.377	95% Adjusted-CLT UCL (Chen-1995)	7.138
		95% Modified-t UCL (Johnson-1978)	6.573

Nonparametric Distribution Free UCLs

95% CLT UCL	5.879	95% Jackknife UCL	6.377
95% Standard Bootstrap UCL	5.679	95% Bootstrap-t UCL	11.34
95% Hall's Bootstrap UCL	16.38	95% Percentile Bootstrap UCL	6.233
95% BCA Bootstrap UCL	6.505		
90% Chebyshev(Mean, Sd) UCL	7.701	95% Chebyshev(Mean, Sd) UCL	9.528

97.5% Chebyshev(Mean, Sd) UCL	12.06	99% Chebyshev(Mean, Sd) UCL	17.04

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.35	Mean	28.44
Maximum	55.5	Median	25.05
SD	16.24	Std. Error of Mean	6.63
Coefficient of Variation	0.571	Skewness	0.87
Mean of logged Data	3.202	SD of logged Data	0.614

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.8	95% Adjusted-CLT UCL (Chen-1995)	41.86
		95% Modified-t UCL (Johnson-1978)	42.19

Nonparametric Distribution Free UCLs

95% CLT UCL	39.35	95% Jackknife UCL	41.8
95% Standard Bootstrap UCL	38.34	95% Bootstrap-t UCL	48.77
95% Hall's Bootstrap UCL	129.4	95% Percentile Bootstrap UCL	39.45
95% BCA Bootstrap UCL	40.02		
90% Chebyshev(Mean, Sd) UCL	48.33	95% Chebyshev(Mean, Sd) UCL	57.34
97.5% Chebyshev(Mean, Sd) UCL	69.85	99% Chebyshev(Mean, Sd) UCL	94.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	26.4	Mean	72.23
Maximum	157	Median	63.25
SD	44.98	Std. Error of Mean	18.36
Coefficient of Variation	0.623	Skewness	1.632
Mean of logged Data	4.135	SD of logged Data	0.586

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	109.2	95% Adjusted-CLT UCL (Chen-1995)	115.5
		95% Modified-t UCL (Johnson-1978)	111.3

Nonparametric Distribution Free UCLs

95% CLT UCL	102.4	95% Jackknife UCL	109.2
95% Standard Bootstrap UCL	99.99	95% Bootstrap-t UCL	137.9
95% Hall's Bootstrap UCL	251.2	95% Percentile Bootstrap UCL	100.6
95% BCA Bootstrap UCL	108.6		
90% Chebyshev(Mean, Sd) UCL	127.3	95% Chebyshev(Mean, Sd) UCL	152.3
97.5% Chebyshev(Mean, Sd) UCL	186.9	99% Chebyshev(Mean, Sd) UCL	255

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:10:34 PM
From File	Thompson A.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.8	Mean	13.47
Maximum	14.7	Median	13.6
SD	1.227	Std. Error of Mean	0.501
Coefficient of Variation	0.0911	Skewness	-0.293
Mean of logged Data	2.597	SD of logged Data	0.0923

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.48	95% Adjusted-CLT UCL (Chen-1995)	14.23
		95% Modified-t UCL (Johnson-1978)	14.47

Nonparametric Distribution Free UCLs

95% CLT UCL	14.29	95% Jackknife UCL	14.48
95% Standard Bootstrap UCL	14.2	95% Bootstrap-t UCL	14.4
95% Hall's Bootstrap UCL	14	95% Percentile Bootstrap UCL	14.23
95% BCA Bootstrap UCL	14.22		
90% Chebyshev(Mean, Sd) UCL	14.97	95% Chebyshev(Mean, Sd) UCL	15.65
97.5% Chebyshev(Mean, Sd) UCL	16.6	99% Chebyshev(Mean, Sd) UCL	18.45

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.2	Mean	20.05
Maximum	51.4	Median	13.8
SD	15.44	Std. Error of Mean	6.305
Coefficient of Variation	0.77	Skewness	2.39

Mean of logged Data	2.837	SD of logged Data	0.552

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.76	95% Adjusted-CLT UCL (Chen-1995)	36.99
		95% Modified-t UCL (Johnson-1978)	33.78

Nonparametric Distribution Free UCLs

95% CLT UCL	30.42	95% Jackknife UCL	32.76
95% Standard Bootstrap UCL	29.45	95% Bootstrap-t UCL	130.7
95% Hall's Bootstrap UCL	118.1	95% Percentile Bootstrap UCL	32.07
95% BCA Bootstrap UCL	33.38		
90% Chebyshev(Mean, Sd) UCL	38.97	95% Chebyshev(Mean, Sd) UCL	47.53
97.5% Chebyshev(Mean, Sd) UCL	59.43	99% Chebyshev(Mean, Sd) UCL	82.79

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	47.53

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	45.3	Mean	47.7
Maximum	50.4	Median	47.9
SD	1.686	Std. Error of Mean	0.688
Coefficient of Variation	0.0354	Skewness	0.307
Mean of logged Data	3.864	SD of logged Data	0.0353

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.09	95% Adjusted-CLT UCL (Chen-1995)	48.92
		95% Modified-t UCL (Johnson-1978)	49.1

Nonparametric Distribution Free UCLs

95% CLT UCL	48.83	95% Jackknife UCL	49.09
95% Standard Bootstrap UCL	48.72	95% Bootstrap-t UCL	49.15
95% Hall's Bootstrap UCL	49.15	95% Percentile Bootstrap UCL	48.75
95% BCA Bootstrap UCL	48.75		
90% Chebyshev(Mean, Sd) UCL	49.77	95% Chebyshev(Mean, Sd) UCL	50.7
97.5% Chebyshev(Mean, Sd) UCL	52	99% Chebyshev(Mean, Sd) UCL	54.55

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.682	Mean	1.362
Maximum	2.38	Median	1.25
SD	0.645	Std. Error of Mean	0.263
Coefficient of Variation	0.474	Skewness	0.682
Mean of logged Data	0.214	SD of logged Data	0.477

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.892	95% Adjusted-CLT UCL (Chen-1995)	1.873
		95% Modified-t UCL (Johnson-1978)	1.905

Nonparametric Distribution Free UCLs

95% CLT UCL	1.795	95% Jackknife UCL	1.892
95% Standard Bootstrap UCL	1.747	95% Bootstrap-t UCL	2.042
95% Hall's Bootstrap UCL	1.751	95% Percentile Bootstrap UCL	1.767
95% BCA Bootstrap UCL	1.773		
90% Chebyshev(Mean, Sd) UCL	2.152	95% Chebyshev(Mean, Sd) UCL	2.51
97.5% Chebyshev(Mean, Sd) UCL	3.007	99% Chebyshev(Mean, Sd) UCL	3.983

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.52	Mean	1.171
Maximum	1.92	Median	1.065
SD	0.539	Std. Error of Mean	0.22
Coefficient of Variation	0.46	Skewness	0.409
Mean of logged Data	0.0629	SD of logged Data	0.488

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.614	95% Adjusted-CLT UCL (Chen-1995)	1.572
		95% Modified-t UCL (Johnson-1978)	1.62

Nonparametric Distribution Free UCLs

95% CLT UCL	1.532	95% Jackknife UCL	1.614
95% Standard Bootstrap UCL	1.499	95% Bootstrap-t UCL	1.823
95% Hall's Bootstrap UCL	2.09	95% Percentile Bootstrap UCL	1.519
95% BCA Bootstrap UCL	1.519		
90% Chebyshev(Mean, Sd) UCL	1.83	95% Chebyshev(Mean, Sd) UCL	2.129
97.5% Chebyshev(Mean, Sd) UCL	2.544	99% Chebyshev(Mean, Sd) UCL	3.358

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.9	Mean	4.668
Maximum	10	Median	4.155
SD	2.981	Std. Error of Mean	1.217
Coefficient of Variation	0.638	Skewness	1.298
Mean of logged Data	1.38	SD of logged Data	0.618

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.12	95% Adjusted-CLT UCL (Chen-1995)	7.359
		95% Modified-t UCL (Johnson-1978)	7.228

Nonparametric Distribution Free UCLs

95% CLT UCL	6.67	95% Jackknife UCL	7.12
95% Standard Bootstrap UCL	6.49	95% Bootstrap-t UCL	8.386
95% Hall's Bootstrap UCL	15.69	95% Percentile Bootstrap UCL	6.617
95% BCA Bootstrap UCL	7.053		
90% Chebyshev(Mean, Sd) UCL	8.319	95% Chebyshev(Mean, Sd) UCL	9.972
97.5% Chebyshev(Mean, Sd) UCL	12.27	99% Chebyshev(Mean, Sd) UCL	16.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.3	Mean	32.2
Maximum	46.1	Median	32.4
SD	9.811	Std. Error of Mean	4.005
Coefficient of Variation	0.305	Skewness	0.226
Mean of logged Data	3.432	SD of logged Data	0.312

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.27	95% Adjusted-CLT UCL (Chen-1995)	39.18
		95% Modified-t UCL (Johnson-1978)	40.33

Nonparametric Distribution Free UCLs

95% CLT UCL	38.79	95% Jackknife UCL	40.27
95% Standard Bootstrap UCL	38.22	95% Bootstrap-t UCL	41.27
95% Hall's Bootstrap UCL	37.91	95% Percentile Bootstrap UCL	38.02
95% BCA Bootstrap UCL	38.65		
90% Chebyshev(Mean, Sd) UCL	44.22	95% Chebyshev(Mean, Sd) UCL	49.66
97.5% Chebyshev(Mean, Sd) UCL	57.21	99% Chebyshev(Mean, Sd) UCL	72.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	27.2	Mean	37.05
Maximum	45.9	Median	39
SD	8.47	Std. Error of Mean	3.458
Coefficient of Variation	0.229	Skewness	-0.341
Mean of logged Data	3.589	SD of logged Data	0.24

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	44.02	95% Adjusted-CLT UCL (Chen-1995)	42.22
		95% Modified-t UCL (Johnson-1978)	43.94

Nonparametric Distribution Free UCLs

95% CLT UCL	42.74	95% Jackknife UCL	44.02
95% Standard Bootstrap UCL	42.31	95% Bootstrap-t UCL	43.12
95% Hall's Bootstrap UCL	40.75	95% Percentile Bootstrap UCL	41.97
95% BCA Bootstrap UCL	41.65		
90% Chebyshev(Mean, Sd) UCL	47.42	95% Chebyshev(Mean, Sd) UCL	52.12
97.5% Chebyshev(Mean, Sd) UCL	58.64	99% Chebyshev(Mean, Sd) UCL	71.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	36.6	Mean	51.02
Maximum	62.3	Median	54.4
SD	11.94	Std. Error of Mean	4.876
Coefficient of Variation	0.234	Skewness	-0.431
Mean of logged Data	3.907	SD of logged Data	0.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	60.84	95% Adjusted-CLT UCL (Chen-1995)	58.12
		95% Modified-t UCL (Johnson-1978)	60.7

Nonparametric Distribution Free UCLs

95% CLT UCL	59.04	95% Jackknife UCL	60.84
95% Standard Bootstrap UCL	58.23	95% Bootstrap-t UCL	60
95% Hall's Bootstrap UCL	56.29	95% Percentile Bootstrap UCL	57.75
95% BCA Bootstrap UCL	57.47		
90% Chebyshev(Mean, Sd) UCL	65.64	95% Chebyshev(Mean, Sd) UCL	72.27
97.5% Chebyshev(Mean, Sd) UCL	81.46	99% Chebyshev(Mean, Sd) UCL	99.53

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20	Mean	27.18
Maximum	34.3	Median	28.4
SD	5.855	Std. Error of Mean	2.39
Coefficient of Variation	0.215	Skewness	-0.32
Mean of logged Data	3.282	SD of logged Data	0.226

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32	95% Adjusted-CLT UCL (Chen-1995)	30.78
		95% Modified-t UCL (Johnson-1978)	31.95

Nonparametric Distribution Free UCLs

95% CLT UCL	31.11	95% Jackknife UCL	32
95% Standard Bootstrap UCL	30.83	95% Bootstrap-t UCL	31.3
95% Hall's Bootstrap UCL	30.12	95% Percentile Bootstrap UCL	30.73
95% BCA Bootstrap UCL	30.6		
90% Chebyshev(Mean, Sd) UCL	34.35	95% Chebyshev(Mean, Sd) UCL	37.6
97.5% Chebyshev(Mean, Sd) UCL	42.11	99% Chebyshev(Mean, Sd) UCL	50.97

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.9	Mean	21.92
Maximum	27.3	Median	22.8
SD	5.27	Std. Error of Mean	2.151
Coefficient of Variation	0.24	Skewness	-0.191
Mean of logged Data	3.062	SD of logged Data	0.25

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.25	95% Adjusted-CLT UCL (Chen-1995)	25.28
		95% Modified-t UCL (Johnson-1978)	26.22

Nonparametric Distribution Free UCLs

95% CLT UCL	25.46	95% Jackknife UCL	26.25
95% Standard Bootstrap UCL	25.12	95% Bootstrap-t UCL	26.29
95% Hall's Bootstrap UCL	24.08	95% Percentile Bootstrap UCL	25.15
95% BCA Bootstrap UCL	25.07		
90% Chebyshev(Mean, Sd) UCL	28.37	95% Chebyshev(Mean, Sd) UCL	31.29
97.5% Chebyshev(Mean, Sd) UCL	35.35	99% Chebyshev(Mean, Sd) UCL	43.32

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	27.6	Mean	42.43
Maximum	55.2	Median	45.25
SD	12.28	Std. Error of Mean	5.015
Coefficient of Variation	0.289	Skewness	-0.336
Mean of logged Data	3.71	SD of logged Data	0.31

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.54	95% Adjusted-CLT UCL (Chen-1995)	49.95
		95% Modified-t UCL (Johnson-1978)	52.42

Nonparametric Distribution Free UCLs

95% CLT UCL	50.68	95% Jackknife UCL	52.54
95% Standard Bootstrap UCL	50.08	95% Bootstrap-t UCL	52.48
95% Hall's Bootstrap UCL	47.86	95% Percentile Bootstrap UCL	49.45
95% BCA Bootstrap UCL	49.22		
90% Chebyshev(Mean, Sd) UCL	57.48	95% Chebyshev(Mean, Sd) UCL	64.29
97.5% Chebyshev(Mean, Sd) UCL	73.75	99% Chebyshev(Mean, Sd) UCL	92.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.07	Mean	7.06
Maximum	9.03	Median	7.29
SD	1.608	Std. Error of Mean	0.656
Coefficient of Variation	0.228	Skewness	-0.14
Mean of logged Data	1.932	SD of logged Data	0.236

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.383	95% Adjusted-CLT UCL (Chen-1995)	8.1
		95% Modified-t UCL (Johnson-1978)	8.376

Nonparametric Distribution Free UCLs

95% CLT UCL	8.14	95% Jackknife UCL	8.383
95% Standard Bootstrap UCL	8.051	95% Bootstrap-t UCL	8.395
95% Hall's Bootstrap UCL	7.84	95% Percentile Bootstrap UCL	8.012
95% BCA Bootstrap UCL	8.04		
90% Chebyshev(Mean, Sd) UCL	9.029	95% Chebyshev(Mean, Sd) UCL	9.921
97.5% Chebyshev(Mean, Sd) UCL	11.16	99% Chebyshev(Mean, Sd) UCL	13.59

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	31.5	Mean	55.85
Maximum	87.8	Median	56.75

SD	21.7	Std. Error of Mean	8.858
Coefficient of Variation	0.389	Skewness	0.289
Mean of logged Data	3.956	SD of logged Data	0.407

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	73.7	95% Adjusted-CLT UCL (Chen-1995)	71.54
		95% Modified-t UCL (Johnson-1978)	73.87

Nonparametric Distribution Free UCLs

95% CLT UCL	70.42	95% Jackknife UCL	73.7
95% Standard Bootstrap UCL	69.3	95% Bootstrap-t UCL	76.42
95% Hall's Bootstrap UCL	69.8	95% Percentile Bootstrap UCL	70.22
95% BCA Bootstrap UCL	70.22		
90% Chebyshev(Mean, Sd) UCL	82.42	95% Chebyshev(Mean, Sd) UCL	94.46
97.5% Chebyshev(Mean, Sd) UCL	111.2	99% Chebyshev(Mean, Sd) UCL	144

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.225	Mean	1.29
Maximum	1.325	Median	1.298
SD	0.0341	Std. Error of Mean	0.0139
Coefficient of Variation	0.0264	Skewness	-1.726
Mean of logged Data	0.254	SD of logged Data	0.0268

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.318	95% Adjusted-CLT UCL (Chen-1995)	1.302
		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.313	95% Jackknife UCL	1.318
95% Standard Bootstrap UCL	1.311	95% Bootstrap-t UCL	1.308
95% Hall's Bootstrap UCL	1.305	95% Percentile Bootstrap UCL	1.308
95% BCA Bootstrap UCL	1.305		
90% Chebyshev(Mean, Sd) UCL	1.332	95% Chebyshev(Mean, Sd) UCL	1.351

97.5% Chebyshev(Mean, Sd) UCL	1.377	99% Chebyshev(Mean, Sd) UCL	1.428

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.4	Mean	28.93
Maximum	35.3	Median	30.4
SD	6.075	Std. Error of Mean	2.48
Coefficient of Variation	0.21	Skewness	-0.409
Mean of logged Data	3.345	SD of logged Data	0.22

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.93	95% Adjusted-CLT UCL (Chen-1995)	32.57
		95% Modified-t UCL (Johnson-1978)	33.86

Nonparametric Distribution Free UCLs

95% CLT UCL	33.01	95% Jackknife UCL	33.93
95% Standard Bootstrap UCL	32.7	95% Bootstrap-t UCL	33.25
95% Hall's Bootstrap UCL	31.7	95% Percentile Bootstrap UCL	32.58
95% BCA Bootstrap UCL	32.03		
90% Chebyshev(Mean, Sd) UCL	36.37	95% Chebyshev(Mean, Sd) UCL	39.74
97.5% Chebyshev(Mean, Sd) UCL	44.42	99% Chebyshev(Mean, Sd) UCL	53.61

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1.71	Mean	3.183
Maximum	4.75	Median	3.145
SD	1.2	Std. Error of Mean	0.49
Coefficient of Variation	0.377	Skewness	0.0838
Mean of logged Data	1.094	SD of logged Data	0.399

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.171	95% Adjusted-CLT UCL (Chen-1995)	4.007
		95% Modified-t UCL (Johnson-1978)	4.173

Nonparametric Distribution Free UCLs

95% CLT UCL	3.989	95% Jackknife UCL	4.171
95% Standard Bootstrap UCL	3.91	95% Bootstrap-t UCL	4.284
95% Hall's Bootstrap UCL	3.759	95% Percentile Bootstrap UCL	3.952
95% BCA Bootstrap UCL	3.962		
90% Chebyshev(Mean, Sd) UCL	4.653	95% Chebyshev(Mean, Sd) UCL	5.319
97.5% Chebyshev(Mean, Sd) UCL	6.243	99% Chebyshev(Mean, Sd) UCL	8.058

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.3	Mean	24.47
Maximum	48.7	Median	21.45
SD	14.06	Std. Error of Mean	5.742
Coefficient of Variation	0.575	Skewness	1.116
Mean of logged Data	3.066	SD of logged Data	0.559

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.04	95% Adjusted-CLT UCL (Chen-1995)	36.71
		95% Modified-t UCL (Johnson-1978)	36.47

Nonparametric Distribution Free UCLs

95% CLT UCL	33.91	95% Jackknife UCL	36.04
95% Standard Bootstrap UCL	32.98	95% Bootstrap-t UCL	43.16
95% Hall's Bootstrap UCL	83.78	95% Percentile Bootstrap UCL	33.57

95% BCA Bootstrap UCL	35.52		
90% Chebyshev(Mean, Sd) UCL	41.69	95% Chebyshev(Mean, Sd) UCL	49.49
97.5% Chebyshev(Mean, Sd) UCL	60.32	99% Chebyshev(Mean, Sd) UCL	81.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	30.8	Mean	53
Maximum	72.3	Median	56.65
SD	17.68	Std. Error of Mean	7.217
Coefficient of Variation	0.334	Skewness	-0.313
Mean of logged Data	3.918	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	67.54	95% Adjusted-CLT UCL (Chen-1995)	63.89
		95% Modified-t UCL (Johnson-1978)	67.39

Nonparametric Distribution Free UCLs

95% CLT UCL	64.87	95% Jackknife UCL	67.54
95% Standard Bootstrap UCL	63.72	95% Bootstrap-t UCL	66.15
95% Hall's Bootstrap UCL	61.22	95% Percentile Bootstrap UCL	64.08
95% BCA Bootstrap UCL	62.6		
90% Chebyshev(Mean, Sd) UCL	74.65	95% Chebyshev(Mean, Sd) UCL	84.46
97.5% Chebyshev(Mean, Sd) UCL	98.07	99% Chebyshev(Mean, Sd) UCL	124.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:11:54 PM
From File	Thompson B.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	13.2	Mean	14.07
Maximum	17.5	Median	13.4
SD	1.693	Std. Error of Mean	0.691
Coefficient of Variation	0.12	Skewness	2.379
Mean of logged Data	2.638	SD of logged Data	0.111

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.46	95% Adjusted-CLT UCL (Chen-1995)	15.92
		95% Modified-t UCL (Johnson-1978)	15.57

Nonparametric Distribution Free UCLs

95% CLT UCL	15.2	95% Jackknife UCL	15.46
95% Standard Bootstrap UCL	15.11	95% Bootstrap-t UCL	23.15
95% Hall's Bootstrap UCL	21.92	95% Percentile Bootstrap UCL	15.4
95% BCA Bootstrap UCL	15.5		
90% Chebyshev(Mean, Sd) UCL	16.14	95% Chebyshev(Mean, Sd) UCL	17.08
97.5% Chebyshev(Mean, Sd) UCL	18.38	99% Chebyshev(Mean, Sd) UCL	20.94

Suggested UCL to Use

95% Student's-t UCL	15.46	or 95% Modified-t UCL	15.57

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.2	Mean	17.73
Maximum	25	Median	16.35
SD	4.122	Std. Error of Mean	1.683
Coefficient of Variation	0.232	Skewness	1.333
Mean of logged Data	2.855	SD of logged Data	0.216

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.12	95% Adjusted-CLT UCL (Chen-1995)	21.48
		95% Modified-t UCL (Johnson-1978)	21.28

Nonparametric Distribution Free UCLs

95% CLT UCL	20.5	95% Jackknife UCL	21.12
95% Standard Bootstrap UCL	20.23	95% Bootstrap-t UCL	26.8
95% Hall's Bootstrap UCL	37.72	95% Percentile Bootstrap UCL	20.45
95% BCA Bootstrap UCL	21.03		
90% Chebyshev(Mean, Sd) UCL	22.78	95% Chebyshev(Mean, Sd) UCL	25.07
97.5% Chebyshev(Mean, Sd) UCL	28.24	99% Chebyshev(Mean, Sd) UCL	34.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	45.4	Mean	49
Maximum	52.9	Median	49.05
SD	3.57	Std. Error of Mean	1.457
Coefficient of Variation	0.0729	Skewness	0.0234
Mean of logged Data	3.89	SD of logged Data	0.0729

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.94	95% Adjusted-CLT UCL (Chen-1995)	51.41
		95% Modified-t UCL (Johnson-1978)	51.94

Nonparametric Distribution Free UCLs

95% CLT UCL	51.4	95% Jackknife UCL	51.94
95% Standard Bootstrap UCL	51.2	95% Bootstrap-t UCL	52.11
95% Hall's Bootstrap UCL	50.23	95% Percentile Bootstrap UCL	51.2
95% BCA Bootstrap UCL	51.2		
90% Chebyshev(Mean, Sd) UCL	53.37	95% Chebyshev(Mean, Sd) UCL	55.35
97.5% Chebyshev(Mean, Sd) UCL	58.1	99% Chebyshev(Mean, Sd) UCL	63.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.941	Mean	1.743
Maximum	2.78	Median	1.7
SD	0.831	Std. Error of Mean	0.339
Coefficient of Variation	0.477	Skewness	0.146
Mean of logged Data	0.452	SD of logged Data	0.505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.426	95% Adjusted-CLT UCL (Chen-1995)	2.322
		95% Modified-t UCL (Johnson-1978)	2.429

Nonparametric Distribution Free UCLs

95% CLT UCL	2.301	95% Jackknife UCL	2.426
95% Standard Bootstrap UCL	2.248	95% Bootstrap-t UCL	2.527
95% Hall's Bootstrap UCL	2.055	95% Percentile Bootstrap UCL	2.26
95% BCA Bootstrap UCL	2.29		
90% Chebyshev(Mean, Sd) UCL	2.76	95% Chebyshev(Mean, Sd) UCL	3.221
97.5% Chebyshev(Mean, Sd) UCL	3.861	99% Chebyshev(Mean, Sd) UCL	5.117

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.505	Mean	1.094
Maximum	2.03	Median	0.965
SD	0.663	Std. Error of Mean	0.271
Coefficient of Variation	0.606	Skewness	0.4
Mean of logged Data	-0.0783	SD of logged Data	0.646

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.64	95% Adjusted-CLT UCL (Chen-1995)	1.587
		95% Modified-t UCL (Johnson-1978)	1.647

Nonparametric Distribution Free UCLs

95% CLT UCL	1.54	95% Jackknife UCL	1.64
95% Standard Bootstrap UCL	1.505	95% Bootstrap-t UCL	1.88
95% Hall's Bootstrap UCL	1.378	95% Percentile Bootstrap UCL	1.521
95% BCA Bootstrap UCL	1.525		
90% Chebyshev(Mean, Sd) UCL	1.907	95% Chebyshev(Mean, Sd) UCL	2.275
97.5% Chebyshev(Mean, Sd) UCL	2.785	99% Chebyshev(Mean, Sd) UCL	3.789

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.95	Mean	3.972
Maximum	6.9	Median	3.533
SD	2.201	Std. Error of Mean	0.898
Coefficient of Variation	0.554	Skewness	0.318
Mean of logged Data	1.24	SD of logged Data	0.585

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.782	95% Adjusted-CLT UCL (Chen-1995)	5.574
		95% Modified-t UCL (Johnson-1978)	5.801

Nonparametric Distribution Free UCLs

95% CLT UCL	5.449	95% Jackknife UCL	5.782
95% Standard Bootstrap UCL	5.335	95% Bootstrap-t UCL	5.84
95% Hall's Bootstrap UCL	4.832	95% Percentile Bootstrap UCL	5.388
95% BCA Bootstrap UCL	5.415		
90% Chebyshev(Mean, Sd) UCL	6.667	95% Chebyshev(Mean, Sd) UCL	7.888
97.5% Chebyshev(Mean, Sd) UCL	9.582	99% Chebyshev(Mean, Sd) UCL	12.91

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.51	Mean	33.25
Maximum	57.9	Median	34.9
SD	20.28	Std. Error of Mean	8.28
Coefficient of Variation	0.61	Skewness	-0.0317
Mean of logged Data	3.301	SD of logged Data	0.746

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.94	95% Adjusted-CLT UCL (Chen-1995)	46.76
		95% Modified-t UCL (Johnson-1978)	49.92

Nonparametric Distribution Free UCLs

95% CLT UCL	46.87	95% Jackknife UCL	49.94
95% Standard Bootstrap UCL	45.64	95% Bootstrap-t UCL	50.77
95% Hall's Bootstrap UCL	42.36	95% Percentile Bootstrap UCL	45.52
95% BCA Bootstrap UCL	45.2		
90% Chebyshev(Mean, Sd) UCL	58.09	95% Chebyshev(Mean, Sd) UCL	69.34
97.5% Chebyshev(Mean, Sd) UCL	84.96	99% Chebyshev(Mean, Sd) UCL	115.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.4	Mean	44.83
Maximum	76.3	Median	47.7
SD	27.79	Std. Error of Mean	11.35
Coefficient of Variation	0.62	Skewness	-0.12
Mean of logged Data	3.585	SD of logged Data	0.778

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	67.7	95% Adjusted-CLT UCL (Chen-1995)	62.9
		95% Modified-t UCL (Johnson-1978)	67.6

Nonparametric Distribution Free UCLs

95% CLT UCL	63.5	95% Jackknife UCL	67.7
95% Standard Bootstrap UCL	62.32	95% Bootstrap-t UCL	68.45
95% Hall's Bootstrap UCL	56.73	95% Percentile Bootstrap UCL	61.85
95% BCA Bootstrap UCL	60.93		
90% Chebyshev(Mean, Sd) UCL	78.87	95% Chebyshev(Mean, Sd) UCL	94.29
97.5% Chebyshev(Mean, Sd) UCL	115.7	99% Chebyshev(Mean, Sd) UCL	157.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.3	Mean	62.12
Maximum	99.7	Median	66.7
SD	37.75	Std. Error of Mean	15.41
Coefficient of Variation	0.608	Skewness	-0.171
Mean of logged Data	3.92	SD of logged Data	0.761

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	93.17	95% Adjusted-CLT UCL (Chen-1995)	86.32
		95% Modified-t UCL (Johnson-1978)	92.99

Nonparametric Distribution Free UCLs

95% CLT UCL	87.47	95% Jackknife UCL	93.17
95% Standard Bootstrap UCL	85.38	95% Bootstrap-t UCL	93.46
95% Hall's Bootstrap UCL	77.47	95% Percentile Bootstrap UCL	85.43
95% BCA Bootstrap UCL	84.03		
90% Chebyshev(Mean, Sd) UCL	108.4	95% Chebyshev(Mean, Sd) UCL	129.3
97.5% Chebyshev(Mean, Sd) UCL	158.4	99% Chebyshev(Mean, Sd) UCL	215.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.4	Mean	33.95
Maximum	57.3	Median	35.6
SD	21.35	Std. Error of Mean	8.714
Coefficient of Variation	0.629	Skewness	-0.104
Mean of logged Data	3.301	SD of logged Data	0.787

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.51	95% Adjusted-CLT UCL (Chen-1995)	47.89
		95% Modified-t UCL (Johnson-1978)	51.45

Nonparametric Distribution Free UCLs

95% CLT UCL	48.28	95% Jackknife UCL	51.51
95% Standard Bootstrap UCL	47.11	95% Bootstrap-t UCL	52.78
95% Hall's Bootstrap UCL	43.15	95% Percentile Bootstrap UCL	47.13
95% BCA Bootstrap UCL	47.77		
90% Chebyshev(Mean, Sd) UCL	60.09	95% Chebyshev(Mean, Sd) UCL	71.93
97.5% Chebyshev(Mean, Sd) UCL	88.37	99% Chebyshev(Mean, Sd) UCL	120.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.58	Mean	21.86
Maximum	36.5	Median	23
SD	13.32	Std. Error of Mean	5.439
Coefficient of Variation	0.609	Skewness	-0.123
Mean of logged Data	2.877	SD of logged Data	0.757

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.82	95% Adjusted-CLT UCL (Chen-1995)	30.52
		95% Modified-t UCL (Johnson-1978)	32.78

Nonparametric Distribution Free UCLs

95% CLT UCL	30.81	95% Jackknife UCL	32.82
95% Standard Bootstrap UCL	29.96	95% Bootstrap-t UCL	32.27
95% Hall's Bootstrap UCL	27.69	95% Percentile Bootstrap UCL	30.1
95% BCA Bootstrap UCL	30		
90% Chebyshev(Mean, Sd) UCL	38.18	95% Chebyshev(Mean, Sd) UCL	45.57
97.5% Chebyshev(Mean, Sd) UCL	55.83	99% Chebyshev(Mean, Sd) UCL	75.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	48.47
Maximum	82.4	Median	50.45
SD	30.6	Std. Error of Mean	12.49
Coefficient of Variation	0.631	Skewness	-0.0653
Mean of logged Data	3.661	SD of logged Data	0.776

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	73.64	95% Adjusted-CLT UCL (Chen-1995)	68.66
		95% Modified-t UCL (Johnson-1978)	73.59

Nonparametric Distribution Free UCLs

95% CLT UCL	69.02	95% Jackknife UCL	73.64
95% Standard Bootstrap UCL	67.03	95% Bootstrap-t UCL	74.14
95% Hall's Bootstrap UCL	60.47	95% Percentile Bootstrap UCL	66.33
95% BCA Bootstrap UCL	67.2		
90% Chebyshev(Mean, Sd) UCL	85.95	95% Chebyshev(Mean, Sd) UCL	102.9
97.5% Chebyshev(Mean, Sd) UCL	126.5	99% Chebyshev(Mean, Sd) UCL	172.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.145	Mean	8.803
Maximum	14.6	Median	8.685
SD	5.392	Std. Error of Mean	2.201
Coefficient of Variation	0.613	Skewness	0.0311
Mean of logged Data	1.981	SD of logged Data	0.716

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.24	95% Adjusted-CLT UCL (Chen-1995)	12.45
		95% Modified-t UCL (Johnson-1978)	13.24

Nonparametric Distribution Free UCLs

95% CLT UCL	12.42	95% Jackknife UCL	13.24
95% Standard Bootstrap UCL	12.03	95% Bootstrap-t UCL	13.05
95% Hall's Bootstrap UCL	11.13	95% Percentile Bootstrap UCL	12.13
95% BCA Bootstrap UCL	12.15		
90% Chebyshev(Mean, Sd) UCL	15.41	95% Chebyshev(Mean, Sd) UCL	18.4
97.5% Chebyshev(Mean, Sd) UCL	22.55	99% Chebyshev(Mean, Sd) UCL	30.71

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.7	Mean	56.87
Maximum	99.9	Median	58.75
SD	35.3	Std. Error of Mean	14.41
Coefficient of Variation	0.621	Skewness	0.0111
Mean of logged Data	3.832	SD of logged Data	0.754

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	85.91	95% Adjusted-CLT UCL (Chen-1995)	80.64
		95% Modified-t UCL (Johnson-1978)	85.92

Nonparametric Distribution Free UCLs

95% CLT UCL	80.57	95% Jackknife UCL	85.91
95% Standard Bootstrap UCL	78.34	95% Bootstrap-t UCL	88.52
95% Hall's Bootstrap UCL	71.92	95% Percentile Bootstrap UCL	77.63
95% BCA Bootstrap UCL	78.65		
90% Chebyshev(Mean, Sd) UCL	100.1	95% Chebyshev(Mean, Sd) UCL	119.7
97.5% Chebyshev(Mean, Sd) UCL	146.9	99% Chebyshev(Mean, Sd) UCL	200.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1	Mean	1.249
Maximum	1.32	Median	1.3
SD	0.124	Std. Error of Mean	0.0506
Coefficient of Variation	0.0992	Skewness	-2.295
Mean of logged Data	0.218	SD of logged Data	0.108

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.351	95% Adjusted-CLT UCL (Chen-1995)	1.282
		95% Modified-t UCL (Johnson-1978)	1.343

Nonparametric Distribution Free UCLs

95% CLT UCL	1.332	95% Jackknife UCL	1.351
95% Standard Bootstrap UCL	1.324	95% Bootstrap-t UCL	1.315
95% Hall's Bootstrap UCL	1.297	95% Percentile Bootstrap UCL	1.308
95% BCA Bootstrap UCL	1.303		
90% Chebyshev(Mean, Sd) UCL	1.401	95% Chebyshev(Mean, Sd) UCL	1.47
97.5% Chebyshev(Mean, Sd) UCL	1.565	99% Chebyshev(Mean, Sd) UCL	1.752

Suggested UCL to Use

95% Student's-t UCL	1.351	or 95% Modified-t UCL	1.343

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.5	Mean	37.67
Maximum	59.6	Median	40.95
SD	21.96	Std. Error of Mean	8.965
Coefficient of Variation	0.583	Skewness	-0.212
Mean of logged Data	3.439	SD of logged Data	0.724

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.73	95% Adjusted-CLT UCL (Chen-1995)	51.58
		95% Modified-t UCL (Johnson-1978)	55.6

Nonparametric Distribution Free UCLs

95% CLT UCL	52.41	95% Jackknife UCL	55.73
95% Standard Bootstrap UCL	50.81	95% Bootstrap-t UCL	55.31
95% Hall's Bootstrap UCL	46.75	95% Percentile Bootstrap UCL	50.45
95% BCA Bootstrap UCL	50.23		
90% Chebyshev(Mean, Sd) UCL	64.56	95% Chebyshev(Mean, Sd) UCL	76.74
97.5% Chebyshev(Mean, Sd) UCL	93.65	99% Chebyshev(Mean, Sd) UCL	126.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.82	Mean	3.4

Maximum	5.2	Median	3.365
SD	1.455	Std. Error of Mean	0.594
Coefficient of Variation	0.428	Skewness	0.0896
Mean of logged Data	1.14	SD of logged Data	0.457

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.597	95% Adjusted-CLT UCL (Chen-1995)	4.4
		95% Modified-t UCL (Johnson-1978)	4.6

Nonparametric Distribution Free UCLs

95% CLT UCL	4.377	95% Jackknife UCL	4.597
95% Standard Bootstrap UCL	4.284	95% Bootstrap-t UCL	4.588
95% Hall's Bootstrap UCL	4.111	95% Percentile Bootstrap UCL	4.237
95% BCA Bootstrap UCL	4.318		
90% Chebyshev(Mean, Sd) UCL	5.182	95% Chebyshev(Mean, Sd) UCL	5.989
97.5% Chebyshev(Mean, Sd) UCL	7.109	99% Chebyshev(Mean, Sd) UCL	9.309

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.2	Mean	20.61
Maximum	38.7	Median	19.65
SD	14.12	Std. Error of Mean	5.764
Coefficient of Variation	0.685	Skewness	0.16
Mean of logged Data	2.773	SD of logged Data	0.825

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.22	95% Adjusted-CLT UCL (Chen-1995)	30.49
		95% Modified-t UCL (Johnson-1978)	32.28

Nonparametric Distribution Free UCLs

95% CLT UCL	30.09	95% Jackknife UCL	32.22
95% Standard Bootstrap UCL	29.2	95% Bootstrap-t UCL	34.72
95% Hall's Bootstrap UCL	26.53	95% Percentile Bootstrap UCL	29.71
95% BCA Bootstrap UCL	30.08		

90% Chebyshev(Mean, Sd) UCL	37.9	95% Chebyshev(Mean, Sd) UCL	45.73
97.5% Chebyshev(Mean, Sd) UCL	56.6	99% Chebyshev(Mean, Sd) UCL	77.95

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.2	Mean	57.18
Maximum	101	Median	58.4
SD	35.87	Std. Error of Mean	14.65
Coefficient of Variation	0.627	Skewness	0.0304
Mean of logged Data	3.835	SD of logged Data	0.756

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	86.7	95% Adjusted-CLT UCL (Chen-1995)	81.47
		95% Modified-t UCL (Johnson-1978)	86.73

Nonparametric Distribution Free UCLs

95% CLT UCL	81.27	95% Jackknife UCL	86.7
95% Standard Bootstrap UCL	78.87	95% Bootstrap-t UCL	89.67
95% Hall's Bootstrap UCL	71.98	95% Percentile Bootstrap UCL	78.05
95% BCA Bootstrap UCL	77.98		
90% Chebyshev(Mean, Sd) UCL	101.1	95% Chebyshev(Mean, Sd) UCL	121
97.5% Chebyshev(Mean, Sd) UCL	148.6	99% Chebyshev(Mean, Sd) UCL	202.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:13:11 PM
From File	Thompson C.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.4	Mean	14.75
Maximum	16.5	Median	15.15
SD	1.628	Std. Error of Mean	0.665
Coefficient of Variation	0.11	Skewness	-0.598
Mean of logged Data	2.686	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.09	95% Adjusted-CLT UCL (Chen-1995)	15.67
		95% Modified-t UCL (Johnson-1978)	16.06

Nonparametric Distribution Free UCLs

95% CLT UCL	15.84	95% Jackknife UCL	16.09
95% Standard Bootstrap UCL	15.75	95% Bootstrap-t UCL	15.82
95% Hall's Bootstrap UCL	15.51	95% Percentile Bootstrap UCL	15.73
95% BCA Bootstrap UCL	15.63		
90% Chebyshev(Mean, Sd) UCL	16.74	95% Chebyshev(Mean, Sd) UCL	17.65
97.5% Chebyshev(Mean, Sd) UCL	18.9	99% Chebyshev(Mean, Sd) UCL	21.36

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.6	Mean	15.45
Maximum	19.1	Median	15
SD	2.407	Std. Error of Mean	0.983
Coefficient of Variation	0.156	Skewness	0.502

Mean of logged Data	2.728	SD of logged Data	0.154

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.43	95% Adjusted-CLT UCL (Chen-1995)	17.28
		95% Modified-t UCL (Johnson-1978)	17.46

Nonparametric Distribution Free UCLs

95% CLT UCL	17.07	95% Jackknife UCL	17.43
95% Standard Bootstrap UCL	16.94	95% Bootstrap-t UCL	17.62
95% Hall's Bootstrap UCL	17.52	95% Percentile Bootstrap UCL	16.98
95% BCA Bootstrap UCL	17.05		
90% Chebyshev(Mean, Sd) UCL	18.4	95% Chebyshev(Mean, Sd) UCL	19.73
97.5% Chebyshev(Mean, Sd) UCL	21.59	99% Chebyshev(Mean, Sd) UCL	25.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48.7	Mean	51.08
Maximum	55.8	Median	50.45
SD	2.526	Std. Error of Mean	1.031
Coefficient of Variation	0.0495	Skewness	1.606
Mean of logged Data	3.932	SD of logged Data	0.0483

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.16	95% Adjusted-CLT UCL (Chen-1995)	53.5
		95% Modified-t UCL (Johnson-1978)	53.27

Nonparametric Distribution Free UCLs

95% CLT UCL	52.78	95% Jackknife UCL	53.16
95% Standard Bootstrap UCL	52.62	95% Bootstrap-t UCL	54.97
95% Hall's Bootstrap UCL	60.6	95% Percentile Bootstrap UCL	52.75
95% BCA Bootstrap UCL	53.22		
90% Chebyshev(Mean, Sd) UCL	54.18	95% Chebyshev(Mean, Sd) UCL	55.58
97.5% Chebyshev(Mean, Sd) UCL	57.52	99% Chebyshev(Mean, Sd) UCL	61.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.958	Mean	2.221
Maximum	3.32	Median	2.415
SD	1.042	Std. Error of Mean	0.426
Coefficient of Variation	0.469	Skewness	-0.403
Mean of logged Data	0.68	SD of logged Data	0.566

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.078	95% Adjusted-CLT UCL (Chen-1995)	2.846
		95% Modified-t UCL (Johnson-1978)	3.066

Nonparametric Distribution Free UCLs

95% CLT UCL	2.92	95% Jackknife UCL	3.078
95% Standard Bootstrap UCL	2.854	95% Bootstrap-t UCL	2.939
95% Hall's Bootstrap UCL	2.706	95% Percentile Bootstrap UCL	2.848
95% BCA Bootstrap UCL	2.827		
90% Chebyshev(Mean, Sd) UCL	3.497	95% Chebyshev(Mean, Sd) UCL	4.075
97.5% Chebyshev(Mean, Sd) UCL	4.878	99% Chebyshev(Mean, Sd) UCL	6.455

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.525	Mean	1.897
Maximum	4.22	Median	1.535
SD	1.597	Std. Error of Mean	0.652
Coefficient of Variation	0.842	Skewness	0.485
Mean of logged Data	0.26	SD of logged Data	1.001

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.21	95% Adjusted-CLT UCL (Chen-1995)	3.107
		95% Modified-t UCL (Johnson-1978)	3.232

Nonparametric Distribution Free UCLs

95% CLT UCL	2.969	95% Jackknife UCL	3.21
95% Standard Bootstrap UCL	2.874	95% Bootstrap-t UCL	3.377
95% Hall's Bootstrap UCL	2.614	95% Percentile Bootstrap UCL	2.931
95% BCA Bootstrap UCL	3.128		
90% Chebyshev(Mean, Sd) UCL	3.852	95% Chebyshev(Mean, Sd) UCL	4.738
97.5% Chebyshev(Mean, Sd) UCL	5.968	99% Chebyshev(Mean, Sd) UCL	8.383

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.5	Mean	4.99
Maximum	9.2	Median	5.38
SD	2.941	Std. Error of Mean	1.201
Coefficient of Variation	0.589	Skewness	0.1
Mean of logged Data	1.417	SD of logged Data	0.726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.41	95% Adjusted-CLT UCL (Chen-1995)	7.018
		95% Modified-t UCL (Johnson-1978)	7.418

Nonparametric Distribution Free UCLs

95% CLT UCL	6.965	95% Jackknife UCL	7.41
95% Standard Bootstrap UCL	6.799	95% Bootstrap-t UCL	7.342
95% Hall's Bootstrap UCL	6.748	95% Percentile Bootstrap UCL	6.72
95% BCA Bootstrap UCL	6.783		
90% Chebyshev(Mean, Sd) UCL	8.592	95% Chebyshev(Mean, Sd) UCL	10.22
97.5% Chebyshev(Mean, Sd) UCL	12.49	99% Chebyshev(Mean, Sd) UCL	16.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.4	Mean	38.13
Maximum	60.7	Median	39
SD	20.23	Std. Error of Mean	8.26
Coefficient of Variation	0.531	Skewness	-0.0968
Mean of logged Data	3.492	SD of logged Data	0.633

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.78	95% Adjusted-CLT UCL (Chen-1995)	51.37
		95% Modified-t UCL (Johnson-1978)	54.72

Nonparametric Distribution Free UCLs

95% CLT UCL	51.72	95% Jackknife UCL	54.78
95% Standard Bootstrap UCL	50.45	95% Bootstrap-t UCL	54.1
95% Hall's Bootstrap UCL	52.31	95% Percentile Bootstrap UCL	49.75
95% BCA Bootstrap UCL	49.42		
90% Chebyshev(Mean, Sd) UCL	62.91	95% Chebyshev(Mean, Sd) UCL	74.14
97.5% Chebyshev(Mean, Sd) UCL	89.71	99% Chebyshev(Mean, Sd) UCL	120.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.6	Mean	45.7
Maximum	70.8	Median	48.75
SD	23.18	Std. Error of Mean	9.465
Coefficient of Variation	0.507	Skewness	-0.289
Mean of logged Data	3.682	SD of logged Data	0.618

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.77	95% Adjusted-CLT UCL (Chen-1995)	60.08
		95% Modified-t UCL (Johnson-1978)	64.59

Nonparametric Distribution Free UCLs

95% CLT UCL	61.27	95% Jackknife UCL	64.77
95% Standard Bootstrap UCL	60.08	95% Bootstrap-t UCL	61.8
95% Hall's Bootstrap UCL	59.19	95% Percentile Bootstrap UCL	59.42
95% BCA Bootstrap UCL	59.23		
90% Chebyshev(Mean, Sd) UCL	74.09	95% Chebyshev(Mean, Sd) UCL	86.95
97.5% Chebyshev(Mean, Sd) UCL	104.8	99% Chebyshev(Mean, Sd) UCL	139.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	25.1	Mean	61.85
Maximum	95.8	Median	64.6
SD	30.69	Std. Error of Mean	12.53
Coefficient of Variation	0.496	Skewness	-0.199
Mean of logged Data	3.995	SD of logged Data	0.59

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	87.1	95% Adjusted-CLT UCL (Chen-1995)	81.37
		95% Modified-t UCL (Johnson-1978)	86.93

Nonparametric Distribution Free UCLs

95% CLT UCL	82.46	95% Jackknife UCL	87.1
95% Standard Bootstrap UCL	80.71	95% Bootstrap-t UCL	86.77
95% Hall's Bootstrap UCL	83.38	95% Percentile Bootstrap UCL	79.82
95% BCA Bootstrap UCL	79.43		
90% Chebyshev(Mean, Sd) UCL	99.44	95% Chebyshev(Mean, Sd) UCL	116.5
97.5% Chebyshev(Mean, Sd) UCL	140.1	99% Chebyshev(Mean, Sd) UCL	186.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.1	Mean	31.12
Maximum	53.8	Median	31.15
SD	16.71	Std. Error of Mean	6.822
Coefficient of Variation	0.537	Skewness	0.118
Mean of logged Data	3.292	SD of logged Data	0.624

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.86	95% Adjusted-CLT UCL (Chen-1995)	42.69
		95% Modified-t UCL (Johnson-1978)	44.92

Nonparametric Distribution Free UCLs

95% CLT UCL	42.34	95% Jackknife UCL	44.86
95% Standard Bootstrap UCL	41.51	95% Bootstrap-t UCL	45.3
95% Hall's Bootstrap UCL	42.63	95% Percentile Bootstrap UCL	41.65
95% BCA Bootstrap UCL	41.65		
90% Chebyshev(Mean, Sd) UCL	51.58	95% Chebyshev(Mean, Sd) UCL	60.85
97.5% Chebyshev(Mean, Sd) UCL	73.72	99% Chebyshev(Mean, Sd) UCL	98.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.28	Mean	24.43
Maximum	41.7	Median	24.7
SD	13.35	Std. Error of Mean	5.451
Coefficient of Variation	0.547	Skewness	0.0292

Mean of logged Data	3.04	SD of logged Data	0.647

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.41	95% Adjusted-CLT UCL (Chen-1995)	33.46
		95% Modified-t UCL (Johnson-1978)	35.42

Nonparametric Distribution Free UCLs

95% CLT UCL	33.39	95% Jackknife UCL	35.41
95% Standard Bootstrap UCL	32.46	95% Bootstrap-t UCL	36.02
95% Hall's Bootstrap UCL	35.04	95% Percentile Bootstrap UCL	32.48
95% BCA Bootstrap UCL	32.48		
90% Chebyshev(Mean, Sd) UCL	40.78	95% Chebyshev(Mean, Sd) UCL	48.19
97.5% Chebyshev(Mean, Sd) UCL	58.47	99% Chebyshev(Mean, Sd) UCL	78.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.1	Mean	53.52
Maximum	84.9	Median	56.65
SD	27.84	Std. Error of Mean	11.36
Coefficient of Variation	0.52	Skewness	-0.242
Mean of logged Data	3.833	SD of logged Data	0.635

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	76.42	95% Adjusted-CLT UCL (Chen-1995)	71.01
		95% Modified-t UCL (Johnson-1978)	76.23

Nonparametric Distribution Free UCLs

95% CLT UCL	72.21	95% Jackknife UCL	76.42
95% Standard Bootstrap UCL	70.67	95% Bootstrap-t UCL	75.02
95% Hall's Bootstrap UCL	72.04	95% Percentile Bootstrap UCL	69.87
95% BCA Bootstrap UCL	69.63		
90% Chebyshev(Mean, Sd) UCL	87.61	95% Chebyshev(Mean, Sd) UCL	103.1
97.5% Chebyshev(Mean, Sd) UCL	124.5	99% Chebyshev(Mean, Sd) UCL	166.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.285	Mean	9.23
Maximum	18.2	Median	8.635
SD	5.796	Std. Error of Mean	2.366
Coefficient of Variation	0.628	Skewness	0.574
Mean of logged Data	2.032	SD of logged Data	0.706

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14	95% Adjusted-CLT UCL (Chen-1995)	13.71
		95% Modified-t UCL (Johnson-1978)	14.09

Nonparametric Distribution Free UCLs

95% CLT UCL	13.12	95% Jackknife UCL	14
95% Standard Bootstrap UCL	12.82	95% Bootstrap-t UCL	15.62
95% Hall's Bootstrap UCL	17.99	95% Percentile Bootstrap UCL	12.58
95% BCA Bootstrap UCL	13.29		
90% Chebyshev(Mean, Sd) UCL	16.33	95% Chebyshev(Mean, Sd) UCL	19.54
97.5% Chebyshev(Mean, Sd) UCL	24.01	99% Chebyshev(Mean, Sd) UCL	32.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23.2	Mean	62.17
Maximum	109	Median	60.3
SD	34.65	Std. Error of Mean	14.14
Coefficient of Variation	0.557	Skewness	0.212
Mean of logged Data	3.975	SD of logged Data	0.64

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	90.67	95% Adjusted-CLT UCL (Chen-1995)	86.74
		95% Modified-t UCL (Johnson-1978)	90.87

Nonparametric Distribution Free UCLs

95% CLT UCL	85.43	95% Jackknife UCL	90.67
95% Standard Bootstrap UCL	84	95% Bootstrap-t UCL	97.67
95% Hall's Bootstrap UCL	97.8	95% Percentile Bootstrap UCL	84.25
95% BCA Bootstrap UCL	84.45		
90% Chebyshev(Mean, Sd) UCL	104.6	95% Chebyshev(Mean, Sd) UCL	123.8
97.5% Chebyshev(Mean, Sd) UCL	150.5	99% Chebyshev(Mean, Sd) UCL	202.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.235	Mean	1.334
Maximum	1.43	Median	1.323
SD	0.0684	Std. Error of Mean	0.0279
Coefficient of Variation	0.0512	Skewness	0.0442
Mean of logged Data	0.287	SD of logged Data	0.0513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.39	95% Adjusted-CLT UCL (Chen-1995)	1.381
		95% Modified-t UCL (Johnson-1978)	1.39

Nonparametric Distribution Free UCLs

95% CLT UCL	1.38	95% Jackknife UCL	1.39
95% Standard Bootstrap UCL	1.376	95% Bootstrap-t UCL	1.407
95% Hall's Bootstrap UCL	1.428	95% Percentile Bootstrap UCL	1.377
95% BCA Bootstrap UCL	1.377		
90% Chebyshev(Mean, Sd) UCL	1.418	95% Chebyshev(Mean, Sd) UCL	1.456
97.5% Chebyshev(Mean, Sd) UCL	1.508	99% Chebyshev(Mean, Sd) UCL	1.612

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.4	Mean	38.38
Maximum	64.1	Median	37.6
SD	20.17	Std. Error of Mean	8.236
Coefficient of Variation	0.526	Skewness	0.123
Mean of logged Data	3.511	SD of logged Data	0.598

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.98	95% Adjusted-CLT UCL (Chen-1995)	52.37
		95% Modified-t UCL (Johnson-1978)	55.05

Nonparametric Distribution Free UCLs

95% CLT UCL	51.93	95% Jackknife UCL	54.98
95% Standard Bootstrap UCL	50.45	95% Bootstrap-t UCL	56.03
95% Hall's Bootstrap UCL	55.97	95% Percentile Bootstrap UCL	50.43
95% BCA Bootstrap UCL	50.43		
90% Chebyshev(Mean, Sd) UCL	63.09	95% Chebyshev(Mean, Sd) UCL	74.28
97.5% Chebyshev(Mean, Sd) UCL	89.82	99% Chebyshev(Mean, Sd) UCL	120.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.985	Mean	4.488
Maximum	7.65	Median	4.63
SD	2.315	Std. Error of Mean	0.945
Coefficient of Variation	0.516	Skewness	-0.258
Mean of logged Data	1.331	SD of logged Data	0.727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.392	95% Adjusted-CLT UCL (Chen-1995)	5.936
		95% Modified-t UCL (Johnson-1978)	6.376

Nonparametric Distribution Free UCLs

95% CLT UCL	6.042	95% Jackknife UCL	6.392
95% Standard Bootstrap UCL	5.915	95% Bootstrap-t UCL	6.297
95% Hall's Bootstrap UCL	5.985	95% Percentile Bootstrap UCL	5.91
95% BCA Bootstrap UCL	5.83		
90% Chebyshev(Mean, Sd) UCL	7.323	95% Chebyshev(Mean, Sd) UCL	8.608
97.5% Chebyshev(Mean, Sd) UCL	10.39	99% Chebyshev(Mean, Sd) UCL	13.89

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.6	Mean	26.45
Maximum	50.9	Median	26.25
SD	16.11	Std. Error of Mean	6.577
Coefficient of Variation	0.609	Skewness	0.402
Mean of logged Data	3.087	SD of logged Data	0.711

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.7	95% Adjusted-CLT UCL (Chen-1995)	38.42
		95% Modified-t UCL (Johnson-1978)	39.88

Nonparametric Distribution Free UCLs

95% CLT UCL	37.27	95% Jackknife UCL	39.7
95% Standard Bootstrap UCL	36.5	95% Bootstrap-t UCL	42.6
95% Hall's Bootstrap UCL	40.86	95% Percentile Bootstrap UCL	36.7
95% BCA Bootstrap UCL	37.92		
90% Chebyshev(Mean, Sd) UCL	46.18	95% Chebyshev(Mean, Sd) UCL	55.12
97.5% Chebyshev(Mean, Sd) UCL	67.53	99% Chebyshev(Mean, Sd) UCL	91.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23.6	Mean	62.52
Maximum	100	Median	64.2
SD	32.73	Std. Error of Mean	13.36
Coefficient of Variation	0.524	Skewness	-0.113
Mean of logged Data	3.991	SD of logged Data	0.625

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	89.45	95% Adjusted-CLT UCL (Chen-1995)	83.84
		95% Modified-t UCL (Johnson-1978)	89.34

Nonparametric Distribution Free UCLs

95% CLT UCL	84.5	95% Jackknife UCL	89.45
95% Standard Bootstrap UCL	82.71	95% Bootstrap-t UCL	91.06
95% Hall's Bootstrap UCL	84.35	95% Percentile Bootstrap UCL	81.33
95% BCA Bootstrap UCL	81.33		
90% Chebyshev(Mean, Sd) UCL	102.6	95% Chebyshev(Mean, Sd) UCL	120.8
97.5% Chebyshev(Mean, Sd) UCL	146	99% Chebyshev(Mean, Sd) UCL	195.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:14:24 PM
From File	Thompson D.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.85	Mean	12.31
Maximum	14	Median	12.85
SD	1.649	Std. Error of Mean	0.673
Coefficient of Variation	0.134	Skewness	-0.721
Mean of logged Data	2.502	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.66	95% Adjusted-CLT UCL (Chen-1995)	13.2
		95% Modified-t UCL (Johnson-1978)	13.63

Nonparametric Distribution Free UCLs

95% CLT UCL	13.42	95% Jackknife UCL	13.66
95% Standard Bootstrap UCL	13.31	95% Bootstrap-t UCL	13.42
95% Hall's Bootstrap UCL	13.03	95% Percentile Bootstrap UCL	13.3
95% BCA Bootstrap UCL	13.19		
90% Chebyshev(Mean, Sd) UCL	14.33	95% Chebyshev(Mean, Sd) UCL	15.24
97.5% Chebyshev(Mean, Sd) UCL	16.51	99% Chebyshev(Mean, Sd) UCL	19.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.14	Mean	15.07
Maximum	27.7	Median	13.25
SD	6.442	Std. Error of Mean	2.63
Coefficient of Variation	0.427	Skewness	1.995

Mean of logged Data	2.652	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.37	95% Adjusted-CLT UCL (Chen-1995)	21.69
		95% Modified-t UCL (Johnson-1978)	20.73

Nonparametric Distribution Free UCLs

95% CLT UCL	19.4	95% Jackknife UCL	20.37
95% Standard Bootstrap UCL	18.99	95% Bootstrap-t UCL	29.69
95% Hall's Bootstrap UCL	41.52	95% Percentile Bootstrap UCL	19.71
95% BCA Bootstrap UCL	20.67		
90% Chebyshev(Mean, Sd) UCL	22.96	95% Chebyshev(Mean, Sd) UCL	26.54
97.5% Chebyshev(Mean, Sd) UCL	31.5	99% Chebyshev(Mean, Sd) UCL	41.24

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	31.7	Mean	41.43
Maximum	45	Median	43.4
SD	5.088	Std. Error of Mean	2.077
Coefficient of Variation	0.123	Skewness	-1.857
Mean of logged Data	3.717	SD of logged Data	0.134

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.62	95% Adjusted-CLT UCL (Chen-1995)	43.17
		95% Modified-t UCL (Johnson-1978)	45.36

Nonparametric Distribution Free UCLs

95% CLT UCL	44.85	95% Jackknife UCL	45.62
95% Standard Bootstrap UCL	44.65	95% Bootstrap-t UCL	44.39
95% Hall's Bootstrap UCL	43.53	95% Percentile Bootstrap UCL	44.18
95% BCA Bootstrap UCL	43.65		
90% Chebyshev(Mean, Sd) UCL	47.66	95% Chebyshev(Mean, Sd) UCL	50.49
97.5% Chebyshev(Mean, Sd) UCL	54.4	99% Chebyshev(Mean, Sd) UCL	62.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.53	Mean	5.682
Maximum	9.95	Median	5.56
SD	4.408	Std. Error of Mean	1.8
Coefficient of Variation	0.776	Skewness	0.00838
Mean of logged Data	1.389	SD of logged Data	0.969

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.308	95% Adjusted-CLT UCL (Chen-1995)	8.649
		95% Modified-t UCL (Johnson-1978)	9.309

Nonparametric Distribution Free UCLs

95% CLT UCL	8.642	95% Jackknife UCL	9.308
95% Standard Bootstrap UCL	8.357	95% Bootstrap-t UCL	9.494
95% Hall's Bootstrap UCL	7.114	95% Percentile Bootstrap UCL	8.388
95% BCA Bootstrap UCL	8.362		
90% Chebyshev(Mean, Sd) UCL	11.08	95% Chebyshev(Mean, Sd) UCL	13.53
97.5% Chebyshev(Mean, Sd) UCL	16.92	99% Chebyshev(Mean, Sd) UCL	23.59

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.52	Mean	3.011
Maximum	5.3	Median	3.235
SD	2.395	Std. Error of Mean	0.978
Coefficient of Variation	0.796	Skewness	-0.0779
Mean of logged Data	0.674	SD of logged Data	1.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.981	95% Adjusted-CLT UCL (Chen-1995)	4.586
		95% Modified-t UCL (Johnson-1978)	4.976

Nonparametric Distribution Free UCLs

95% CLT UCL	4.619	95% Jackknife UCL	4.981
95% Standard Bootstrap UCL	4.487	95% Bootstrap-t UCL	4.957
95% Hall's Bootstrap UCL	3.871	95% Percentile Bootstrap UCL	4.471
95% BCA Bootstrap UCL	4.487		
90% Chebyshev(Mean, Sd) UCL	5.945	95% Chebyshev(Mean, Sd) UCL	7.273
97.5% Chebyshev(Mean, Sd) UCL	9.118	99% Chebyshev(Mean, Sd) UCL	12.74

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.125	Mean	11.97
Maximum	21.55	Median	11.85
SD	9.948	Std. Error of Mean	4.061
Coefficient of Variation	0.831	Skewness	9.5957E-4
Mean of logged Data	2.046	SD of logged Data	1.108

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.16	95% Adjusted-CLT UCL (Chen-1995)	18.65
		95% Modified-t UCL (Johnson-1978)	20.16

Nonparametric Distribution Free UCLs

95% CLT UCL	18.65	95% Jackknife UCL	20.16
95% Standard Bootstrap UCL	18.03	95% Bootstrap-t UCL	20.23
95% Hall's Bootstrap UCL	15.24	95% Percentile Bootstrap UCL	18.16
95% BCA Bootstrap UCL	18		
90% Chebyshev(Mean, Sd) UCL	24.16	95% Chebyshev(Mean, Sd) UCL	29.68

97.5% Chebyshev(Mean, Sd) UCL	37.33	99% Chebyshev(Mean, Sd) UCL	52.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.4	Mean	38.1
Maximum	59.8	Median	39.15
SD	20.3	Std. Error of Mean	8.288
Coefficient of Variation	0.533	Skewness	-0.0568
Mean of logged Data	3.499	SD of logged Data	0.605

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.8	95% Adjusted-CLT UCL (Chen-1995)	51.53
		95% Modified-t UCL (Johnson-1978)	54.77

Nonparametric Distribution Free UCLs

95% CLT UCL	51.73	95% Jackknife UCL	54.8
95% Standard Bootstrap UCL	50.25	95% Bootstrap-t UCL	55.05
95% Hall's Bootstrap UCL	46.09	95% Percentile Bootstrap UCL	50.6
95% BCA Bootstrap UCL	51.13		
90% Chebyshev(Mean, Sd) UCL	62.96	95% Chebyshev(Mean, Sd) UCL	74.23
97.5% Chebyshev(Mean, Sd) UCL	89.86	99% Chebyshev(Mean, Sd) UCL	120.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19	Mean	44.28
Maximum	70.2	Median	45.1
SD	23.26	Std. Error of Mean	9.496

Coefficient of Variation	0.525	Skewness	-0.0322
Mean of logged Data	3.654	SD of logged Data	0.593

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.42	95% Adjusted-CLT UCL (Chen-1995)	59.77
		95% Modified-t UCL (Johnson-1978)	63.4

Nonparametric Distribution Free UCLs

95% CLT UCL	59.9	95% Jackknife UCL	63.42
95% Standard Bootstrap UCL	58.56	95% Bootstrap-t UCL	64.15
95% Hall's Bootstrap UCL	53.96	95% Percentile Bootstrap UCL	58.98
95% BCA Bootstrap UCL	58.9		
90% Chebyshev(Mean, Sd) UCL	72.77	95% Chebyshev(Mean, Sd) UCL	85.68
97.5% Chebyshev(Mean, Sd) UCL	103.6	99% Chebyshev(Mean, Sd) UCL	138.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.1	Mean	59.58
Maximum	91.5	Median	63.5
SD	31.29	Std. Error of Mean	12.77
Coefficient of Variation	0.525	Skewness	-0.109
Mean of logged Data	3.949	SD of logged Data	0.6

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	85.32	95% Adjusted-CLT UCL (Chen-1995)	79.99
		95% Modified-t UCL (Johnson-1978)	85.23

Nonparametric Distribution Free UCLs

95% CLT UCL	80.6	95% Jackknife UCL	85.32
95% Standard Bootstrap UCL	78.49	95% Bootstrap-t UCL	85.4
95% Hall's Bootstrap UCL	71.7	95% Percentile Bootstrap UCL	79.2

95% BCA Bootstrap UCL	79.37		
90% Chebyshev(Mean, Sd) UCL	97.91	95% Chebyshev(Mean, Sd) UCL	115.3
97.5% Chebyshev(Mean, Sd) UCL	139.4	99% Chebyshev(Mean, Sd) UCL	186.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.1	Mean	33.37
Maximum	51.2	Median	34.55
SD	17.63	Std. Error of Mean	7.197
Coefficient of Variation	0.528	Skewness	-0.0682
Mean of logged Data	3.37	SD of logged Data	0.596

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.87	95% Adjusted-CLT UCL (Chen-1995)	44.99
		95% Modified-t UCL (Johnson-1978)	47.84

Nonparametric Distribution Free UCLs

95% CLT UCL	45.21	95% Jackknife UCL	47.87
95% Standard Bootstrap UCL	44.04	95% Bootstrap-t UCL	47.86
95% Hall's Bootstrap UCL	39.94	95% Percentile Bootstrap UCL	44.1
95% BCA Bootstrap UCL	44.42		
90% Chebyshev(Mean, Sd) UCL	54.96	95% Chebyshev(Mean, Sd) UCL	64.74
97.5% Chebyshev(Mean, Sd) UCL	78.31	99% Chebyshev(Mean, Sd) UCL	105

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10	Mean	22.15
Maximum	35.7	Median	21.6
SD	11.42	Std. Error of Mean	4.664
Coefficient of Variation	0.516	Skewness	0.097
Mean of logged Data	2.971	SD of logged Data	0.57

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.55	95% Adjusted-CLT UCL (Chen-1995)	30.02
		95% Modified-t UCL (Johnson-1978)	31.58

Nonparametric Distribution Free UCLs

95% CLT UCL	29.82	95% Jackknife UCL	31.55
95% Standard Bootstrap UCL	29.07	95% Bootstrap-t UCL	33.6
95% Hall's Bootstrap UCL	28.18	95% Percentile Bootstrap UCL	29.47
95% BCA Bootstrap UCL	28.87		
90% Chebyshev(Mean, Sd) UCL	36.14	95% Chebyshev(Mean, Sd) UCL	42.48
97.5% Chebyshev(Mean, Sd) UCL	51.28	99% Chebyshev(Mean, Sd) UCL	68.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.3	Mean	53.6
Maximum	87.2	Median	54.95
SD	30.16	Std. Error of Mean	12.31
Coefficient of Variation	0.563	Skewness	-0.0214
Mean of logged Data	3.823	SD of logged Data	0.642

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	78.41	95% Adjusted-CLT UCL (Chen-1995)	73.74
		95% Modified-t UCL (Johnson-1978)	78.39

Nonparametric Distribution Free UCLs

95% CLT UCL	73.85	95% Jackknife UCL	78.41

95% Standard Bootstrap UCL	71.92	95% Bootstrap-t UCL	79.34
95% Hall's Bootstrap UCL	65.18	95% Percentile Bootstrap UCL	72.02
95% BCA Bootstrap UCL	72.65		
90% Chebyshev(Mean, Sd) UCL	90.54	95% Chebyshev(Mean, Sd) UCL	107.3
97.5% Chebyshev(Mean, Sd) UCL	130.5	99% Chebyshev(Mean, Sd) UCL	176.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.265	Mean	18.22
Maximum	33.15	Median	18.14
SD	15.51	Std. Error of Mean	6.333
Coefficient of Variation	0.851	Skewness	0.00175
Mean of logged Data	2.432	SD of logged Data	1.155

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.98	95% Adjusted-CLT UCL (Chen-1995)	28.64
		95% Modified-t UCL (Johnson-1978)	30.98

Nonparametric Distribution Free UCLs

95% CLT UCL	28.64	95% Jackknife UCL	30.98
95% Standard Bootstrap UCL	27.75	95% Bootstrap-t UCL	30.88
95% Hall's Bootstrap UCL	23.29	95% Percentile Bootstrap UCL	27.8
95% BCA Bootstrap UCL	27.75		
90% Chebyshev(Mean, Sd) UCL	37.22	95% Chebyshev(Mean, Sd) UCL	45.82
97.5% Chebyshev(Mean, Sd) UCL	57.77	99% Chebyshev(Mean, Sd) UCL	81.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	25.9	Mean	65.87
Maximum	99.2	Median	67.8
SD	32.99	Std. Error of Mean	13.47
Coefficient of Variation	0.501	Skewness	-0.117
Mean of logged Data	4.062	SD of logged Data	0.573

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	93.01	95% Adjusted-CLT UCL (Chen-1995)	87.33
		95% Modified-t UCL (Johnson-1978)	92.9

Nonparametric Distribution Free UCLs

95% CLT UCL	88.02	95% Jackknife UCL	93.01
95% Standard Bootstrap UCL	86	95% Bootstrap-t UCL	93.68
95% Hall's Bootstrap UCL	78.86	95% Percentile Bootstrap UCL	86.3
95% BCA Bootstrap UCL	86.3		
90% Chebyshev(Mean, Sd) UCL	106.3	95% Chebyshev(Mean, Sd) UCL	124.6
97.5% Chebyshev(Mean, Sd) UCL	150	99% Chebyshev(Mean, Sd) UCL	199.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.21	Mean	7.103
Maximum	13.25	Median	6.853
SD	6.394	Std. Error of Mean	2.61
Coefficient of Variation	0.9	Skewness	0.00842
Mean of logged Data	1.4	SD of logged Data	1.271

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.36	95% Adjusted-CLT UCL (Chen-1995)	11.41
		95% Modified-t UCL (Johnson-1978)	12.36

Nonparametric Distribution Free UCLs

95% CLT UCL	11.4	95% Jackknife UCL	12.36
95% Standard Bootstrap UCL	11.07	95% Bootstrap-t UCL	12.18
95% Hall's Bootstrap UCL	9.17	95% Percentile Bootstrap UCL	11.07
95% BCA Bootstrap UCL	11.07		
90% Chebyshev(Mean, Sd) UCL	14.93	95% Chebyshev(Mean, Sd) UCL	18.48
97.5% Chebyshev(Mean, Sd) UCL	23.4	99% Chebyshev(Mean, Sd) UCL	33.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.3	Mean	33.6
Maximum	50.7	Median	35.8
SD	16.61	Std. Error of Mean	6.779
Coefficient of Variation	0.494	Skewness	-0.137
Mean of logged Data	3.394	SD of logged Data	0.559

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.26	95% Adjusted-CLT UCL (Chen-1995)	44.35
		95% Modified-t UCL (Johnson-1978)	47.2

Nonparametric Distribution Free UCLs

95% CLT UCL	44.75	95% Jackknife UCL	47.26
95% Standard Bootstrap UCL	43.64	95% Bootstrap-t UCL	46.92
95% Hall's Bootstrap UCL	40.23	95% Percentile Bootstrap UCL	43.85
95% BCA Bootstrap UCL	43.48		
90% Chebyshev(Mean, Sd) UCL	53.94	95% Chebyshev(Mean, Sd) UCL	63.15
97.5% Chebyshev(Mean, Sd) UCL	75.94	99% Chebyshev(Mean, Sd) UCL	101.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.93	Mean	7.832
Maximum	11.5	Median	7.765
SD	2.92	Std. Error of Mean	1.192
Coefficient of Variation	0.373	Skewness	0.143
Mean of logged Data	1.997	SD of logged Data	0.385

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.23	95% Adjusted-CLT UCL (Chen-1995)	9.867
		95% Modified-t UCL (Johnson-1978)	10.25

Nonparametric Distribution Free UCLs

95% CLT UCL	9.793	95% Jackknife UCL	10.23
95% Standard Bootstrap UCL	9.632	95% Bootstrap-t UCL	10.6
95% Hall's Bootstrap UCL	8.935	95% Percentile Bootstrap UCL	9.705
95% BCA Bootstrap UCL	9.705		
90% Chebyshev(Mean, Sd) UCL	11.41	95% Chebyshev(Mean, Sd) UCL	13.03
97.5% Chebyshev(Mean, Sd) UCL	15.28	99% Chebyshev(Mean, Sd) UCL	19.69

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.46	Mean	26.53
Maximum	39.2	Median	28.35
SD	12.97	Std. Error of Mean	5.297
Coefficient of Variation	0.489	Skewness	-0.253
Mean of logged Data	3.153	SD of logged Data	0.582

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.2	95% Adjusted-CLT UCL (Chen-1995)	34.65
		95% Modified-t UCL (Johnson-1978)	37.11

Nonparametric Distribution Free UCLs

95% CLT UCL	35.24	95% Jackknife UCL	37.2
95% Standard Bootstrap UCL	34.5	95% Bootstrap-t UCL	36.71
95% Hall's Bootstrap UCL	32.13	95% Percentile Bootstrap UCL	34.7
95% BCA Bootstrap UCL	34.35		
90% Chebyshev(Mean, Sd) UCL	42.42	95% Chebyshev(Mean, Sd) UCL	49.62
97.5% Chebyshev(Mean, Sd) UCL	59.61	99% Chebyshev(Mean, Sd) UCL	79.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	27.7	Mean	68.85
Maximum	108	Median	70.15
SD	36.61	Std. Error of Mean	14.95
Coefficient of Variation	0.532	Skewness	-0.0459
Mean of logged Data	4.092	SD of logged Data	0.602

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	98.97	95% Adjusted-CLT UCL (Chen-1995)	93.14
		95% Modified-t UCL (Johnson-1978)	98.92

Nonparametric Distribution Free UCLs

95% CLT UCL	93.44	95% Jackknife UCL	98.97
95% Standard Bootstrap UCL	91.2	95% Bootstrap-t UCL	98.99
95% Hall's Bootstrap UCL	82.82	95% Percentile Bootstrap UCL	91.32
95% BCA Bootstrap UCL	91.32		
90% Chebyshev(Mean, Sd) UCL	113.7	95% Chebyshev(Mean, Sd) UCL	134
97.5% Chebyshev(Mean, Sd) UCL	162.2	99% Chebyshev(Mean, Sd) UCL	217.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:15:34 PM
From File	Thompson E.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.5	Mean	13.72
Maximum	16.9	Median	13.1
SD	1.628	Std. Error of Mean	0.665
Coefficient of Variation	0.119	Skewness	2.033
Mean of logged Data	2.613	SD of logged Data	0.111

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.06	95% Adjusted-CLT UCL (Chen-1995)	15.4
		95% Modified-t UCL (Johnson-1978)	15.15

Nonparametric Distribution Free UCLs

95% CLT UCL	14.81	95% Jackknife UCL	15.06
95% Standard Bootstrap UCL	14.71	95% Bootstrap-t UCL	19.05
95% Hall's Bootstrap UCL	21.36	95% Percentile Bootstrap UCL	14.9
95% BCA Bootstrap UCL	15.08		
90% Chebyshev(Mean, Sd) UCL	15.71	95% Chebyshev(Mean, Sd) UCL	16.61
97.5% Chebyshev(Mean, Sd) UCL	17.87	99% Chebyshev(Mean, Sd) UCL	20.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.5	Mean	16.02
Maximum	18.1	Median	16.75
SD	1.944	Std. Error of Mean	0.793
Coefficient of Variation	0.121	Skewness	-0.66
Mean of logged Data	2.767	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.62	95% Adjusted-CLT UCL (Chen-1995)	17.09
		95% Modified-t UCL (Johnson-1978)	17.58

Nonparametric Distribution Free UCLs

95% CLT UCL	17.32	95% Jackknife UCL	17.62
95% Standard Bootstrap UCL	17.22	95% Bootstrap-t UCL	17.44
95% Hall's Bootstrap UCL	16.88	95% Percentile Bootstrap UCL	17.2
95% BCA Bootstrap UCL	17.15		
90% Chebyshev(Mean, Sd) UCL	18.4	95% Chebyshev(Mean, Sd) UCL	19.48
97.5% Chebyshev(Mean, Sd) UCL	20.97	99% Chebyshev(Mean, Sd) UCL	23.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	42.1	Mean	44.03
Maximum	46.1	Median	43.65
SD	1.682	Std. Error of Mean	0.687
Coefficient of Variation	0.0382	Skewness	0.324
Mean of logged Data	3.784	SD of logged Data	0.0381

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.42	95% Adjusted-CLT UCL (Chen-1995)	45.26
		95% Modified-t UCL (Johnson-1978)	45.43

Nonparametric Distribution Free UCLs

95% CLT UCL	45.16	95% Jackknife UCL	45.42
95% Standard Bootstrap UCL	45.07	95% Bootstrap-t UCL	46.4
95% Hall's Bootstrap UCL	45.43	95% Percentile Bootstrap UCL	45.07
95% BCA Bootstrap UCL	45.07		
90% Chebyshev(Mean, Sd) UCL	46.09	95% Chebyshev(Mean, Sd) UCL	47.03
97.5% Chebyshev(Mean, Sd) UCL	48.32	99% Chebyshev(Mean, Sd) UCL	50.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	9.85	Mean	9.908
Maximum	9.95	Median	9.9
SD	0.0376	Std. Error of Mean	0.0154
Coefficient of Variation	0.0038	Skewness	-0.313
Mean of logged Data	2.293	SD of logged Data	0.0038

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.939	95% Adjusted-CLT UCL (Chen-1995)	9.932
		95% Modified-t UCL (Johnson-1978)	9.939

Nonparametric Distribution Free UCLs

95% CLT UCL	9.934	95% Jackknife UCL	9.939
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	9.954	95% Chebyshev(Mean, Sd) UCL	9.975
97.5% Chebyshev(Mean, Sd) UCL	10	99% Chebyshev(Mean, Sd) UCL	10.06

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	5.25	Mean	5.292
Maximum	5.3	Median	5.3
SD	0.0204	Std. Error of Mean	0.00833
Coefficient of Variation	0.00386	Skewness	-2.449
Mean of logged Data	1.666	SD of logged Data	0.00387

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.308	95% Adjusted-CLT UCL (Chen-1995)	5.296
		95% Modified-t UCL (Johnson-1978)	5.307

Nonparametric Distribution Free UCLs

95% CLT UCL	5.305	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5.317	95% Chebyshev(Mean, Sd) UCL	5.328
97.5% Chebyshev(Mean, Sd) UCL	5.344	99% Chebyshev(Mean, Sd) UCL	5.375

Suggested UCL to Use

95% Student's-t UCL	5.308	or 95% Modified-t UCL	5.307

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.9	Mean	20.08
Maximum	24.5	Median	21.4
SD	3.539	Std. Error of Mean	1.445
Coefficient of Variation	0.176	Skewness	-0.549
Mean of logged Data	2.986	SD of logged Data	0.186

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.99	95% Adjusted-CLT UCL (Chen-1995)	22.11
		95% Modified-t UCL (Johnson-1978)	22.94

Nonparametric Distribution Free UCLs

95% CLT UCL	22.46	95% Jackknife UCL	22.99
95% Standard Bootstrap UCL	22.24	95% Bootstrap-t UCL	22.72
95% Hall's Bootstrap UCL	21.82	95% Percentile Bootstrap UCL	22.22

95% BCA Bootstrap UCL	21.94		
90% Chebyshev(Mean, Sd) UCL	24.42	95% Chebyshev(Mean, Sd) UCL	26.38
97.5% Chebyshev(Mean, Sd) UCL	29.11	99% Chebyshev(Mean, Sd) UCL	34.46

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	71.4	Mean	152.2
Maximum	335	Median	122
SD	96.15	Std. Error of Mean	39.25
Coefficient of Variation	0.632	Skewness	1.78
Mean of logged Data	4.889	SD of logged Data	0.546

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	231.2	95% Adjusted-CLT UCL (Chen-1995)	247.2
		95% Modified-t UCL (Johnson-1978)	236

Nonparametric Distribution Free UCLs

95% CLT UCL	216.7	95% Jackknife UCL	231.2
95% Standard Bootstrap UCL	210.2	95% Bootstrap-t UCL	311.2
95% Hall's Bootstrap UCL	499.7	95% Percentile Bootstrap UCL	223.6
95% BCA Bootstrap UCL	236.5		
90% Chebyshev(Mean, Sd) UCL	269.9	95% Chebyshev(Mean, Sd) UCL	323.3
97.5% Chebyshev(Mean, Sd) UCL	397.3	99% Chebyshev(Mean, Sd) UCL	542.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	80.2	Mean	179.5

Maximum	396	Median	146
SD	113.8	Std. Error of Mean	46.46
Coefficient of Variation	0.634	Skewness	1.771
Mean of logged Data	5.052	SD of logged Data	0.553

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	273.2	95% Adjusted-CLT UCL (Chen-1995)	291.8
		95% Modified-t UCL (Johnson-1978)	278.8

Nonparametric Distribution Free UCLs

95% CLT UCL	256	95% Jackknife UCL	273.2
95% Standard Bootstrap UCL	249.1	95% Bootstrap-t UCL	403.5
95% Hall's Bootstrap UCL	598.7	95% Percentile Bootstrap UCL	253
95% BCA Bootstrap UCL	276.7		
90% Chebyshev(Mean, Sd) UCL	318.9	95% Chebyshev(Mean, Sd) UCL	382.1
97.5% Chebyshev(Mean, Sd) UCL	469.7	99% Chebyshev(Mean, Sd) UCL	641.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	111	Mean	233.3
Maximum	479	Median	195.5
SD	134.8	Std. Error of Mean	55.02
Coefficient of Variation	0.578	Skewness	1.461
Mean of logged Data	5.33	SD of logged Data	0.528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	344.2	95% Adjusted-CLT UCL (Chen-1995)	358.9
		95% Modified-t UCL (Johnson-1978)	349.7

Nonparametric Distribution Free UCLs

95% CLT UCL	323.8	95% Jackknife UCL	344.2
95% Standard Bootstrap UCL	316.4	95% Bootstrap-t UCL	477.7
95% Hall's Bootstrap UCL	685.1	95% Percentile Bootstrap UCL	325.8
95% BCA Bootstrap UCL	342.7		

90% Chebyshev(Mean, Sd) UCL	398.4	95% Chebyshev(Mean, Sd) UCL	473.2
97.5% Chebyshev(Mean, Sd) UCL	577	99% Chebyshev(Mean, Sd) UCL	780.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	58.3	Mean	118.9
Maximum	234	Median	104.4
SD	62.83	Std. Error of Mean	25.65
Coefficient of Variation	0.528	Skewness	1.464
Mean of logged Data	4.675	SD of logged Data	0.486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	170.6	95% Adjusted-CLT UCL (Chen-1995)	177.5
		95% Modified-t UCL (Johnson-1978)	173.1

Nonparametric Distribution Free UCLs

95% CLT UCL	161.1	95% Jackknife UCL	170.6
95% Standard Bootstrap UCL	158.3	95% Bootstrap-t UCL	206.7
95% Hall's Bootstrap UCL	332.9	95% Percentile Bootstrap UCL	163
95% BCA Bootstrap UCL	169.2		
90% Chebyshev(Mean, Sd) UCL	195.8	95% Chebyshev(Mean, Sd) UCL	230.7
97.5% Chebyshev(Mean, Sd) UCL	279.1	99% Chebyshev(Mean, Sd) UCL	374.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.3	Mean	95.32
Maximum	211	Median	77.95
SD	61.94	Std. Error of Mean	25.29
Coefficient of Variation	0.65	Skewness	1.623
Mean of logged Data	4.405	SD of logged Data	0.587

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	146.3	95% Adjusted-CLT UCL (Chen-1995)	154.8
		95% Modified-t UCL (Johnson-1978)	149.1

Nonparametric Distribution Free UCLs

95% CLT UCL	136.9	95% Jackknife UCL	146.3
95% Standard Bootstrap UCL	133	95% Bootstrap-t UCL	184.8
95% Hall's Bootstrap UCL	309.6	95% Percentile Bootstrap UCL	141.1
95% BCA Bootstrap UCL	144.3		
90% Chebyshev(Mean, Sd) UCL	171.2	95% Chebyshev(Mean, Sd) UCL	205.5
97.5% Chebyshev(Mean, Sd) UCL	253.2	99% Chebyshev(Mean, Sd) UCL	346.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	96.1	Mean	202
Maximum	454	Median	163
SD	129.7	Std. Error of Mean	52.97
Coefficient of Variation	0.642	Skewness	1.948
Mean of logged Data	5.174	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	308.8	95% Adjusted-CLT UCL (Chen-1995)	334.1
		95% Modified-t UCL (Johnson-1978)	315.8

Nonparametric Distribution Free UCLs

95% CLT UCL	289.1	95% Jackknife UCL	308.8
95% Standard Bootstrap UCL	282.2	95% Bootstrap-t UCL	443.6
95% Hall's Bootstrap UCL	632.8	95% Percentile Bootstrap UCL	286
95% BCA Bootstrap UCL	312.3		
90% Chebyshev(Mean, Sd) UCL	360.9	95% Chebyshev(Mean, Sd) UCL	432.9
97.5% Chebyshev(Mean, Sd) UCL	532.8	99% Chebyshev(Mean, Sd) UCL	729.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	32.85	Mean	37.58
Maximum	60.2	Median	33.13
SD	11.08	Std. Error of Mean	4.524
Coefficient of Variation	0.295	Skewness	2.448
Mean of logged Data	3.598	SD of logged Data	0.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.7	95% Adjusted-CLT UCL (Chen-1995)	49.86
		95% Modified-t UCL (Johnson-1978)	47.45

Nonparametric Distribution Free UCLs

95% CLT UCL	45.02	95% Jackknife UCL	46.7
95% Standard Bootstrap UCL	44.31	95% Bootstrap-t UCL	462.5
95% Hall's Bootstrap UCL	310.8	95% Percentile Bootstrap UCL	46.6
95% BCA Bootstrap UCL	46.71		
90% Chebyshev(Mean, Sd) UCL	51.15	95% Chebyshev(Mean, Sd) UCL	57.3
97.5% Chebyshev(Mean, Sd) UCL	65.83	99% Chebyshev(Mean, Sd) UCL	82.59

Suggested UCL to Use

95% Student's-t UCL	46.7	or 95% Modified-t UCL	47.45

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	125	Mean	244
Maximum	531	Median	197.5
SD	151.4	Std. Error of Mean	61.83
Coefficient of Variation	0.621	Skewness	1.755
Mean of logged Data	5.366	SD of logged Data	0.535

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	368.6	95% Adjusted-CLT UCL (Chen-1995)	393
		95% Modified-t UCL (Johnson-1978)	376

Nonparametric Distribution Free UCLs

95% CLT UCL	345.7	95% Jackknife UCL	368.6
95% Standard Bootstrap UCL	335.3	95% Bootstrap-t UCL	482.3
95% Hall's Bootstrap UCL	730.7	95% Percentile Bootstrap UCL	346
95% BCA Bootstrap UCL	374.2		
90% Chebyshev(Mean, Sd) UCL	429.5	95% Chebyshev(Mean, Sd) UCL	513.5
97.5% Chebyshev(Mean, Sd) UCL	630.1	99% Chebyshev(Mean, Sd) UCL	859.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	13.15	Mean	13.22
Maximum	13.3	Median	13.2
SD	0.0516	Std. Error of Mean	0.0211
Coefficient of Variation	0.00391	Skewness	0.666
Mean of logged Data	2.581	SD of logged Data	0.0039

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.26	95% Adjusted-CLT UCL (Chen-1995)	13.26
		95% Modified-t UCL (Johnson-1978)	13.26

Nonparametric Distribution Free UCLs

95% CLT UCL	13.25	95% Jackknife UCL	13.26
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.28	95% Chebyshev(Mean, Sd) UCL	13.31
97.5% Chebyshev(Mean, Sd) UCL	13.35	99% Chebyshev(Mean, Sd) UCL	13.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	61.5	Mean	130.8
Maximum	254	Median	114.1
SD	69.32	Std. Error of Mean	28.3
Coefficient of Variation	0.53	Skewness	1.278
Mean of logged Data	4.765	SD of logged Data	0.502

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	187.8	95% Adjusted-CLT UCL (Chen-1995)	193.1
		95% Modified-t UCL (Johnson-1978)	190.2

Nonparametric Distribution Free UCLs

95% CLT UCL	177.3	95% Jackknife UCL	187.8
95% Standard Bootstrap UCL	174.4	95% Bootstrap-t UCL	221.5
95% Hall's Bootstrap UCL	411.8	95% Percentile Bootstrap UCL	175.4
95% BCA Bootstrap UCL	183.8		
90% Chebyshev(Mean, Sd) UCL	215.6	95% Chebyshev(Mean, Sd) UCL	254.1
97.5% Chebyshev(Mean, Sd) UCL	307.5	99% Chebyshev(Mean, Sd) UCL	412.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.4	Mean	10.48
Maximum	13.5	Median	9.925
SD	2.142	Std. Error of Mean	0.874
Coefficient of Variation	0.204	Skewness	0.108
Mean of logged Data	2.332	SD of logged Data	0.209

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.25	95% Adjusted-CLT UCL (Chen-1995)	11.96
		95% Modified-t UCL (Johnson-1978)	12.25

Nonparametric Distribution Free UCLs

95% CLT UCL	11.92	95% Jackknife UCL	12.25
95% Standard Bootstrap UCL	11.81	95% Bootstrap-t UCL	12.78
95% Hall's Bootstrap UCL	14.08	95% Percentile Bootstrap UCL	11.88
95% BCA Bootstrap UCL	11.73		
90% Chebyshev(Mean, Sd) UCL	13.11	95% Chebyshev(Mean, Sd) UCL	14.29
97.5% Chebyshev(Mean, Sd) UCL	15.94	99% Chebyshev(Mean, Sd) UCL	19.18

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.7	Mean	94.98
Maximum	195	Median	77.4
SD	54.73	Std. Error of Mean	22.35
Coefficient of Variation	0.576	Skewness	1.516
Mean of logged Data	4.435	SD of logged Data	0.515

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	140	95% Adjusted-CLT UCL (Chen-1995)	146.5
		95% Modified-t UCL (Johnson-1978)	142.3

Nonparametric Distribution Free UCLs

95% CLT UCL	131.7	95% Jackknife UCL	140
95% Standard Bootstrap UCL	128.6	95% Bootstrap-t UCL	185.8
95% Hall's Bootstrap UCL	302.6	95% Percentile Bootstrap UCL	132
95% BCA Bootstrap UCL	140.3		
90% Chebyshev(Mean, Sd) UCL	162	95% Chebyshev(Mean, Sd) UCL	192.4
97.5% Chebyshev(Mean, Sd) UCL	234.5	99% Chebyshev(Mean, Sd) UCL	317.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	124	Mean	251
Maximum	574	Median	201
SD	165.3	Std. Error of Mean	67.5
Coefficient of Variation	0.659	Skewness	2.006
Mean of logged Data	5.387	SD of logged Data	0.54

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	387	95% Adjusted-CLT UCL (Chen-1995)	421.1
		95% Modified-t UCL (Johnson-1978)	396.2

Nonparametric Distribution Free UCLs

95% CLT UCL	362	95% Jackknife UCL	387
95% Standard Bootstrap UCL	352.2	95% Bootstrap-t UCL	570
95% Hall's Bootstrap UCL	791.8	95% Percentile Bootstrap UCL	376.8
95% BCA Bootstrap UCL	396.7		
90% Chebyshev(Mean, Sd) UCL	453.5	95% Chebyshev(Mean, Sd) UCL	545.2
97.5% Chebyshev(Mean, Sd) UCL	672.5	99% Chebyshev(Mean, Sd) UCL	922.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:16:42 PM
From File	Thompson F.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.5	Mean	11.47
Maximum	12.2	Median	11.8
SD	0.766	Std. Error of Mean	0.313
Coefficient of Variation	0.0668	Skewness	-0.779
Mean of logged Data	2.438	SD of logged Data	0.0681

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.1	95% Adjusted-CLT UCL (Chen-1995)	11.87
		95% Modified-t UCL (Johnson-1978)	12.08

Nonparametric Distribution Free UCLs

95% CLT UCL	11.98	95% Jackknife UCL	12.1
95% Standard Bootstrap UCL	11.94	95% Bootstrap-t UCL	12.03
95% Hall's Bootstrap UCL	11.78	95% Percentile Bootstrap UCL	11.95
95% BCA Bootstrap UCL	11.93		
90% Chebyshev(Mean, Sd) UCL	12.4	95% Chebyshev(Mean, Sd) UCL	12.83
97.5% Chebyshev(Mean, Sd) UCL	13.42	99% Chebyshev(Mean, Sd) UCL	14.58

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.8	Mean	14.77
Maximum	17	Median	14.3
SD	1.693	Std. Error of Mean	0.691
Coefficient of Variation	0.115	Skewness	0.461

Mean of logged Data	2.687	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.16	95% Adjusted-CLT UCL (Chen-1995)	16.04
		95% Modified-t UCL (Johnson-1978)	16.18

Nonparametric Distribution Free UCLs

95% CLT UCL	15.9	95% Jackknife UCL	16.16
95% Standard Bootstrap UCL	15.8	95% Bootstrap-t UCL	16.95
95% Hall's Bootstrap UCL	17.39	95% Percentile Bootstrap UCL	15.78
95% BCA Bootstrap UCL	15.85		
90% Chebyshev(Mean, Sd) UCL	16.84	95% Chebyshev(Mean, Sd) UCL	17.78
97.5% Chebyshev(Mean, Sd) UCL	19.08	99% Chebyshev(Mean, Sd) UCL	21.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.8	Mean	43.35
Maximum	46	Median	43.35
SD	1.665	Std. Error of Mean	0.68
Coefficient of Variation	0.0384	Skewness	0.129
Mean of logged Data	3.769	SD of logged Data	0.0384

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.72	95% Adjusted-CLT UCL (Chen-1995)	44.51
		95% Modified-t UCL (Johnson-1978)	44.73

Nonparametric Distribution Free UCLs

95% CLT UCL	44.47	95% Jackknife UCL	44.72
95% Standard Bootstrap UCL	44.37	95% Bootstrap-t UCL	44.59
95% Hall's Bootstrap UCL	44.93	95% Percentile Bootstrap UCL	44.32
95% BCA Bootstrap UCL	44.32		
90% Chebyshev(Mean, Sd) UCL	45.39	95% Chebyshev(Mean, Sd) UCL	46.31
97.5% Chebyshev(Mean, Sd) UCL	47.59	99% Chebyshev(Mean, Sd) UCL	50.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.08	Mean	4.535
Maximum	6.39	Median	4.165
SD	1.269	Std. Error of Mean	0.518
Coefficient of Variation	0.28	Skewness	0.57
Mean of logged Data	1.48	SD of logged Data	0.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.579	95% Adjusted-CLT UCL (Chen-1995)	5.516
		95% Modified-t UCL (Johnson-1978)	5.599

Nonparametric Distribution Free UCLs

95% CLT UCL	5.387	95% Jackknife UCL	5.579
95% Standard Bootstrap UCL	5.321	95% Bootstrap-t UCL	6.008
95% Hall's Bootstrap UCL	6.628	95% Percentile Bootstrap UCL	5.338
95% BCA Bootstrap UCL	5.41		
90% Chebyshev(Mean, Sd) UCL	6.09	95% Chebyshev(Mean, Sd) UCL	6.794
97.5% Chebyshev(Mean, Sd) UCL	7.771	99% Chebyshev(Mean, Sd) UCL	9.691

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.15	Mean	7.655
Maximum	12.3	Median	6.87
SD	3.748	Std. Error of Mean	1.53
Coefficient of Variation	0.49	Skewness	0.276
Mean of logged Data	1.929	SD of logged Data	0.51

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.74	95% Adjusted-CLT UCL (Chen-1995)	10.36
		95% Modified-t UCL (Johnson-1978)	10.77

Nonparametric Distribution Free UCLs

95% CLT UCL	10.17	95% Jackknife UCL	10.74
95% Standard Bootstrap UCL	9.902	95% Bootstrap-t UCL	10.51
95% Hall's Bootstrap UCL	9.114	95% Percentile Bootstrap UCL	9.993
95% BCA Bootstrap UCL	9.81		
90% Chebyshev(Mean, Sd) UCL	12.25	95% Chebyshev(Mean, Sd) UCL	14.32
97.5% Chebyshev(Mean, Sd) UCL	17.21	99% Chebyshev(Mean, Sd) UCL	22.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.3	Mean	22.2
Maximum	32	Median	22.95
SD	10.7	Std. Error of Mean	4.368
Coefficient of Variation	0.482	Skewness	-0.027
Mean of logged Data	2.991	SD of logged Data	0.522

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31	95% Adjusted-CLT UCL (Chen-1995)	29.33
		95% Modified-t UCL (Johnson-1978)	30.99

Nonparametric Distribution Free UCLs

95% CLT UCL	29.38	95% Jackknife UCL	31
95% Standard Bootstrap UCL	28.68	95% Bootstrap-t UCL	31.03
95% Hall's Bootstrap UCL	25.81	95% Percentile Bootstrap UCL	28.65
95% BCA Bootstrap UCL	28.65		
90% Chebyshev(Mean, Sd) UCL	35.3	95% Chebyshev(Mean, Sd) UCL	41.24
97.5% Chebyshev(Mean, Sd) UCL	49.48	99% Chebyshev(Mean, Sd) UCL	65.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	90.8	Mean	185.8
Maximum	271	Median	188.5
SD	90.34	Std. Error of Mean	36.88
Coefficient of Variation	0.486	Skewness	-0.0241
Mean of logged Data	5.114	SD of logged Data	0.528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	260.1	95% Adjusted-CLT UCL (Chen-1995)	246.1
		95% Modified-t UCL (Johnson-1978)	260.1

Nonparametric Distribution Free UCLs

95% CLT UCL	246.5	95% Jackknife UCL	260.1
95% Standard Bootstrap UCL	241.3	95% Bootstrap-t UCL	258.7
95% Hall's Bootstrap UCL	216.6	95% Percentile Bootstrap UCL	241.5
95% BCA Bootstrap UCL	241.8		
90% Chebyshev(Mean, Sd) UCL	296.4	95% Chebyshev(Mean, Sd) UCL	346.6
97.5% Chebyshev(Mean, Sd) UCL	416.1	99% Chebyshev(Mean, Sd) UCL	552.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	113	Mean	219.8
Maximum	328	Median	208.5
SD	100	Std. Error of Mean	40.83
Coefficient of Variation	0.455	Skewness	0.0759
Mean of logged Data	5.299	SD of logged Data	0.484

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	302.1	95% Adjusted-CLT UCL (Chen-1995)	288.3
		95% Modified-t UCL (Johnson-1978)	302.3

Nonparametric Distribution Free UCLs

95% CLT UCL	287	95% Jackknife UCL	302.1
95% Standard Bootstrap UCL	280.4	95% Bootstrap-t UCL	297
95% Hall's Bootstrap UCL	258.7	95% Percentile Bootstrap UCL	285.2
95% BCA Bootstrap UCL	278.8		
90% Chebyshev(Mean, Sd) UCL	342.3	95% Chebyshev(Mean, Sd) UCL	397.8
97.5% Chebyshev(Mean, Sd) UCL	474.8	99% Chebyshev(Mean, Sd) UCL	626

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	148	Mean	304.2
Maximum	468	Median	297
SD	145	Std. Error of Mean	59.2
Coefficient of Variation	0.477	Skewness	0.0371
Mean of logged Data	5.612	SD of logged Data	0.514

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	423.5	95% Adjusted-CLT UCL (Chen-1995)	402.5
		95% Modified-t UCL (Johnson-1978)	423.6

Nonparametric Distribution Free UCLs

95% CLT UCL	401.5	95% Jackknife UCL	423.5
95% Standard Bootstrap UCL	394	95% Bootstrap-t UCL	436.5
95% Hall's Bootstrap UCL	356.8	95% Percentile Bootstrap UCL	397.8
95% BCA Bootstrap UCL	394.3		
90% Chebyshev(Mean, Sd) UCL	481.8	95% Chebyshev(Mean, Sd) UCL	562.2
97.5% Chebyshev(Mean, Sd) UCL	673.9	99% Chebyshev(Mean, Sd) UCL	893.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	65.4	Mean	145.7
Maximum	230	Median	143.7
SD	75.68	Std. Error of Mean	30.89
Coefficient of Variation	0.52	Skewness	0.0266
Mean of logged Data	4.853	SD of logged Data	0.569

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	207.9	95% Adjusted-CLT UCL (Chen-1995)	196.8
		95% Modified-t UCL (Johnson-1978)	208

Nonparametric Distribution Free UCLs

95% CLT UCL	196.5	95% Jackknife UCL	207.9
95% Standard Bootstrap UCL	191.9	95% Bootstrap-t UCL	212.4
95% Hall's Bootstrap UCL	172.4	95% Percentile Bootstrap UCL	193.9
95% BCA Bootstrap UCL	190.2		
90% Chebyshev(Mean, Sd) UCL	238.3	95% Chebyshev(Mean, Sd) UCL	280.3
97.5% Chebyshev(Mean, Sd) UCL	338.6	99% Chebyshev(Mean, Sd) UCL	453

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	56.8	Mean	122.6
Maximum	183	Median	124.3
SD	62.07	Std. Error of Mean	25.34
Coefficient of Variation	0.506	Skewness	-0.0248
Mean of logged Data	4.687	SD of logged Data	0.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	173.7	95% Adjusted-CLT UCL (Chen-1995)	164
		95% Modified-t UCL (Johnson-1978)	173.6

Nonparametric Distribution Free UCLs

95% CLT UCL	164.3	95% Jackknife UCL	173.7
95% Standard Bootstrap UCL	160.3	95% Bootstrap-t UCL	172.9
95% Hall's Bootstrap UCL	143.8	95% Percentile Bootstrap UCL	161.2
95% BCA Bootstrap UCL	161.2		
90% Chebyshev(Mean, Sd) UCL	198.6	95% Chebyshev(Mean, Sd) UCL	233.1
97.5% Chebyshev(Mean, Sd) UCL	280.8	99% Chebyshev(Mean, Sd) UCL	374.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	118	Mean	225.3
Maximum	336	Median	217
SD	104.9	Std. Error of Mean	42.84
Coefficient of Variation	0.466	Skewness	0.0535
Mean of logged Data	5.318	SD of logged Data	0.496

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	311.7	95% Adjusted-CLT UCL (Chen-1995)	296.8
		95% Modified-t UCL (Johnson-1978)	311.8

Nonparametric Distribution Free UCLs

95% CLT UCL	295.8	95% Jackknife UCL	311.7
95% Standard Bootstrap UCL	288.7	95% Bootstrap-t UCL	307.4
95% Hall's Bootstrap UCL	263.2	95% Percentile Bootstrap UCL	290.7
95% BCA Bootstrap UCL	288.3		
90% Chebyshev(Mean, Sd) UCL	353.9	95% Chebyshev(Mean, Sd) UCL	412.1
97.5% Chebyshev(Mean, Sd) UCL	492.9	99% Chebyshev(Mean, Sd) UCL	651.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20	Mean	44.6
Maximum	68.8	Median	44.15
SD	23.1	Std. Error of Mean	9.432
Coefficient of Variation	0.518	Skewness	-0.00197
Mean of logged Data	3.67	SD of logged Data	0.569

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.61	95% Adjusted-CLT UCL (Chen-1995)	60.11
		95% Modified-t UCL (Johnson-1978)	63.6

Nonparametric Distribution Free UCLs

95% CLT UCL	60.11	95% Jackknife UCL	63.61
95% Standard Bootstrap UCL	58.86	95% Bootstrap-t UCL	63.73
95% Hall's Bootstrap UCL	52.63	95% Percentile Bootstrap UCL	58.88
95% BCA Bootstrap UCL	58.95		
90% Chebyshev(Mean, Sd) UCL	72.9	95% Chebyshev(Mean, Sd) UCL	85.71
97.5% Chebyshev(Mean, Sd) UCL	103.5	99% Chebyshev(Mean, Sd) UCL	138.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	140	Mean	268.5
Maximum	390	Median	268
SD	123.4	Std. Error of Mean	50.36
Coefficient of Variation	0.459	Skewness	-0.0114
Mean of logged Data	5.495	SD of logged Data	0.493

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	370	95% Adjusted-CLT UCL (Chen-1995)	351.1
		95% Modified-t UCL (Johnson-1978)	369.9

Nonparametric Distribution Free UCLs

95% CLT UCL	351.3	95% Jackknife UCL	370
95% Standard Bootstrap UCL	343.6	95% Bootstrap-t UCL	371.3
95% Hall's Bootstrap UCL	310.4	95% Percentile Bootstrap UCL	344.7
95% BCA Bootstrap UCL	343.7		
90% Chebyshev(Mean, Sd) UCL	419.6	95% Chebyshev(Mean, Sd) UCL	488
97.5% Chebyshev(Mean, Sd) UCL	583	99% Chebyshev(Mean, Sd) UCL	769.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.57	Mean	3.097
Maximum	4.94	Median	2.745
SD	1.617	Std. Error of Mean	0.66
Coefficient of Variation	0.522	Skewness	0.255
Mean of logged Data	1.008	SD of logged Data	0.55

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.427	95% Adjusted-CLT UCL (Chen-1995)	4.256
		95% Modified-t UCL (Johnson-1978)	4.438

Nonparametric Distribution Free UCLs

95% CLT UCL	4.182	95% Jackknife UCL	4.427
95% Standard Bootstrap UCL	4.074	95% Bootstrap-t UCL	4.238
95% Hall's Bootstrap UCL	3.697	95% Percentile Bootstrap UCL	4.118
95% BCA Bootstrap UCL	4.178		
90% Chebyshev(Mean, Sd) UCL	5.077	95% Chebyshev(Mean, Sd) UCL	5.974
97.5% Chebyshev(Mean, Sd) UCL	7.219	99% Chebyshev(Mean, Sd) UCL	9.665

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	81.5	Mean	183.6
Maximum	286	Median	182.5
SD	96.14	Std. Error of Mean	39.25
Coefficient of Variation	0.524	Skewness	0.00268
Mean of logged Data	5.082	SD of logged Data	0.576

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	262.7	95% Adjusted-CLT UCL (Chen-1995)	248.2
		95% Modified-t UCL (Johnson-1978)	262.7

Nonparametric Distribution Free UCLs

95% CLT UCL	248.1	95% Jackknife UCL	262.7
95% Standard Bootstrap UCL	242.5	95% Bootstrap-t UCL	265.5
95% Hall's Bootstrap UCL	217.2	95% Percentile Bootstrap UCL	244.5
95% BCA Bootstrap UCL	241.9		
90% Chebyshev(Mean, Sd) UCL	301.3	95% Chebyshev(Mean, Sd) UCL	354.7
97.5% Chebyshev(Mean, Sd) UCL	428.7	99% Chebyshev(Mean, Sd) UCL	574.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.74	Mean	7.534
Maximum	13.6	Median	4.855
SD	4.251	Std. Error of Mean	1.736
Coefficient of Variation	0.564	Skewness	1.002
Mean of logged Data	1.9	SD of logged Data	0.515

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.03	95% Adjusted-CLT UCL (Chen-1995)	11.15
		95% Modified-t UCL (Johnson-1978)	11.15

Nonparametric Distribution Free UCLs

95% CLT UCL	10.39	95% Jackknife UCL	11.03
95% Standard Bootstrap UCL	10.08	95% Bootstrap-t UCL	167.4
95% Hall's Bootstrap UCL	152.6	95% Percentile Bootstrap UCL	10.28
95% BCA Bootstrap UCL	10.45		
90% Chebyshev(Mean, Sd) UCL	12.74	95% Chebyshev(Mean, Sd) UCL	15.1
97.5% Chebyshev(Mean, Sd) UCL	18.37	99% Chebyshev(Mean, Sd) UCL	24.8

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 15.1

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	54.8	Mean	105.7
Maximum	153	Median	107.9
SD	49.8	Std. Error of Mean	20.33
Coefficient of Variation	0.471	Skewness	-0.0208
Mean of logged Data	4.557	SD of logged Data	0.508

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	146.7	95% Adjusted-CLT UCL (Chen-1995)	138.9
		95% Modified-t UCL (Johnson-1978)	146.6

Nonparametric Distribution Free UCLs

95% CLT UCL	139.1	95% Jackknife UCL	146.7
95% Standard Bootstrap UCL	135.2	95% Bootstrap-t UCL	146.9
95% Hall's Bootstrap UCL	122.4	95% Percentile Bootstrap UCL	136.4
95% BCA Bootstrap UCL	135.6		
90% Chebyshev(Mean, Sd) UCL	166.7	95% Chebyshev(Mean, Sd) UCL	194.3
97.5% Chebyshev(Mean, Sd) UCL	232.7	99% Chebyshev(Mean, Sd) UCL	308

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	146	Mean	269
Maximum	387	Median	265.5
SD	120.3	Std. Error of Mean	49.13
Coefficient of Variation	0.447	Skewness	0.00525
Mean of logged Data	5.503	SD of logged Data	0.476

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	368	95% Adjusted-CLT UCL (Chen-1995)	349.9
		95% Modified-t UCL (Johnson-1978)	368

Nonparametric Distribution Free UCLs

95% CLT UCL	349.8	95% Jackknife UCL	368
95% Standard Bootstrap UCL	344	95% Bootstrap-t UCL	375.5
95% Hall's Bootstrap UCL	309.1	95% Percentile Bootstrap UCL	342.3
95% BCA Bootstrap UCL	342.2		
90% Chebyshev(Mean, Sd) UCL	416.4	95% Chebyshev(Mean, Sd) UCL	483.2
97.5% Chebyshev(Mean, Sd) UCL	575.8	99% Chebyshev(Mean, Sd) UCL	757.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:18:14 PM
From File	Thompson G.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	8.81	Mean	10.12
Maximum	11.5	Median	10.1
SD	0.873	Std. Error of Mean	0.356
Coefficient of Variation	0.0863	Skewness	0.182
Mean of logged Data	2.311	SD of logged Data	0.0864

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.83	95% Adjusted-CLT UCL (Chen-1995)	10.73
		95% Modified-t UCL (Johnson-1978)	10.84

Nonparametric Distribution Free UCLs

95% CLT UCL	10.7	95% Jackknife UCL	10.83
95% Standard Bootstrap UCL	10.65	95% Bootstrap-t UCL	10.81
95% Hall's Bootstrap UCL	11.03	95% Percentile Bootstrap UCL	10.67
95% BCA Bootstrap UCL	10.65		
90% Chebyshev(Mean, Sd) UCL	11.19	95% Chebyshev(Mean, Sd) UCL	11.67
97.5% Chebyshev(Mean, Sd) UCL	12.34	99% Chebyshev(Mean, Sd) UCL	13.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.3	Mean	19.72
Maximum	52.7	Median	13.9
SD	16.22	Std. Error of Mean	6.622
Coefficient of Variation	0.823	Skewness	2.405
Mean of logged Data	2.8	SD of logged Data	0.583

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.06	95% Adjusted-CLT UCL (Chen-1995)	37.56
		95% Modified-t UCL (Johnson-1978)	34.15

Nonparametric Distribution Free UCLs

95% CLT UCL	30.61	95% Jackknife UCL	33.06
95% Standard Bootstrap UCL	29.68	95% Bootstrap-t UCL	361.3
95% Hall's Bootstrap UCL	240.7	95% Percentile Bootstrap UCL	32.63
95% BCA Bootstrap UCL	33.33		
90% Chebyshev(Mean, Sd) UCL	39.58	95% Chebyshev(Mean, Sd) UCL	48.58
97.5% Chebyshev(Mean, Sd) UCL	61.07	99% Chebyshev(Mean, Sd) UCL	85.61

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	48.58

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	32.8	Mean	39.6
Maximum	43.8	Median	40
SD	4.037	Std. Error of Mean	1.648
Coefficient of Variation	0.102	Skewness	-0.895
Mean of logged Data	3.674	SD of logged Data	0.106

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.92	95% Adjusted-CLT UCL (Chen-1995)	41.67
		95% Modified-t UCL (Johnson-1978)	42.82

Nonparametric Distribution Free UCLs

95% CLT UCL	42.31	95% Jackknife UCL	42.92
95% Standard Bootstrap UCL	42.12	95% Bootstrap-t UCL	42.28
95% Hall's Bootstrap UCL	41.8	95% Percentile Bootstrap UCL	41.98
95% BCA Bootstrap UCL	41.43		
90% Chebyshev(Mean, Sd) UCL	44.54	95% Chebyshev(Mean, Sd) UCL	46.78
97.5% Chebyshev(Mean, Sd) UCL	49.89	99% Chebyshev(Mean, Sd) UCL	56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.59	Mean	6.537
Maximum	8.81	Median	6.945
SD	2.192	Std. Error of Mean	0.895
Coefficient of Variation	0.335	Skewness	-0.432
Mean of logged Data	1.823	SD of logged Data	0.374

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.34	95% Adjusted-CLT UCL (Chen-1995)	7.84
		95% Modified-t UCL (Johnson-1978)	8.313

Nonparametric Distribution Free UCLs

95% CLT UCL	8.008	95% Jackknife UCL	8.34
95% Standard Bootstrap UCL	7.87	95% Bootstrap-t UCL	8.143
95% Hall's Bootstrap UCL	7.629	95% Percentile Bootstrap UCL	7.797
95% BCA Bootstrap UCL	7.708		
90% Chebyshev(Mean, Sd) UCL	9.221	95% Chebyshev(Mean, Sd) UCL	10.44
97.5% Chebyshev(Mean, Sd) UCL	12.12	99% Chebyshev(Mean, Sd) UCL	15.44

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.53	Mean	19.79
Maximum	27.9	Median	22.15
SD	7.958	Std. Error of Mean	3.249
Coefficient of Variation	0.402	Skewness	-0.661
Mean of logged Data	2.898	SD of logged Data	0.486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.34	95% Adjusted-CLT UCL (Chen-1995)	24.19
		95% Modified-t UCL (Johnson-1978)	26.19

Nonparametric Distribution Free UCLs

95% CLT UCL	25.13	95% Jackknife UCL	26.34
95% Standard Bootstrap UCL	24.75	95% Bootstrap-t UCL	25.32
95% Hall's Bootstrap UCL	23.28	95% Percentile Bootstrap UCL	24.43
95% BCA Bootstrap UCL	24		
90% Chebyshev(Mean, Sd) UCL	29.54	95% Chebyshev(Mean, Sd) UCL	33.95
97.5% Chebyshev(Mean, Sd) UCL	40.08	99% Chebyshev(Mean, Sd) UCL	52.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.1	Mean	70.05
Maximum	104	Median	77.7
SD	32.86	Std. Error of Mean	13.41
Coefficient of Variation	0.469	Skewness	-0.563
Mean of logged Data	4.124	SD of logged Data	0.594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	97.08	95% Adjusted-CLT UCL (Chen-1995)	88.82
		95% Modified-t UCL (Johnson-1978)	96.57

Nonparametric Distribution Free UCLs

95% CLT UCL	92.11	95% Jackknife UCL	97.08
95% Standard Bootstrap UCL	90.78	95% Bootstrap-t UCL	91.47
95% Hall's Bootstrap UCL	85.35	95% Percentile Bootstrap UCL	89.35
95% BCA Bootstrap UCL	88.17		
90% Chebyshev(Mean, Sd) UCL	110.3	95% Chebyshev(Mean, Sd) UCL	128.5

97.5% Chebyshev(Mean, Sd) UCL	153.8	99% Chebyshev(Mean, Sd) UCL	203.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	199	Mean	513.7
Maximum	756	Median	558.5
SD	249	Std. Error of Mean	101.7
Coefficient of Variation	0.485	Skewness	-0.3
Mean of logged Data	6.118	SD of logged Data	0.575

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	718.5	95% Adjusted-CLT UCL (Chen-1995)	667.6
		95% Modified-t UCL (Johnson-1978)	716.5

Nonparametric Distribution Free UCLs

95% CLT UCL	680.9	95% Jackknife UCL	718.5
95% Standard Bootstrap UCL	663.5	95% Bootstrap-t UCL	706
95% Hall's Bootstrap UCL	617.7	95% Percentile Bootstrap UCL	661.5
95% BCA Bootstrap UCL	658.8		
90% Chebyshev(Mean, Sd) UCL	818.7	95% Chebyshev(Mean, Sd) UCL	956.8
97.5% Chebyshev(Mean, Sd) UCL	1149	99% Chebyshev(Mean, Sd) UCL	1525

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	241	Mean	612.7
Maximum	945	Median	656.5
SD	297.8	Std. Error of Mean	121.6
Coefficient of Variation	0.486	Skewness	-0.203
Mean of logged Data	6.297	SD of logged Data	0.567

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	857.6	95% Adjusted-CLT UCL (Chen-1995)	801.9
		95% Modified-t UCL (Johnson-1978)	855.9

Nonparametric Distribution Free UCLs

95% CLT UCL	812.6	95% Jackknife UCL	857.6
95% Standard Bootstrap UCL	794.6	95% Bootstrap-t UCL	843.1
95% Hall's Bootstrap UCL	745.6	95% Percentile Bootstrap UCL	790.7
95% BCA Bootstrap UCL	789.2		
90% Chebyshev(Mean, Sd) UCL	977.4	95% Chebyshev(Mean, Sd) UCL	1143
97.5% Chebyshev(Mean, Sd) UCL	1372	99% Chebyshev(Mean, Sd) UCL	1822

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	320	Mean	802
Maximum	1230	Median	860
SD	399.3	Std. Error of Mean	163
Coefficient of Variation	0.498	Skewness	-0.175
Mean of logged Data	6.561	SD of logged Data	0.576

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1130	95% Adjusted-CLT UCL (Chen-1995)	1058
		95% Modified-t UCL (Johnson-1978)	1129

Nonparametric Distribution Free UCLs

95% CLT UCL	1070	95% Jackknife UCL	1130
95% Standard Bootstrap UCL	1042	95% Bootstrap-t UCL	1122
95% Hall's Bootstrap UCL	971	95% Percentile Bootstrap UCL	1052
95% BCA Bootstrap UCL	1023		
90% Chebyshev(Mean, Sd) UCL	1291	95% Chebyshev(Mean, Sd) UCL	1513
97.5% Chebyshev(Mean, Sd) UCL	1820	99% Chebyshev(Mean, Sd) UCL	2424

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	176	Mean	417.2
Maximum	607	Median	454
SD	202.4	Std. Error of Mean	82.61
Coefficient of Variation	0.485	Skewness	-0.203
Mean of logged Data	5.915	SD of logged Data	0.556

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	583.6	95% Adjusted-CLT UCL (Chen-1995)	545.7
		95% Modified-t UCL (Johnson-1978)	582.5

Nonparametric Distribution Free UCLs

95% CLT UCL	553.1	95% Jackknife UCL	583.6
95% Standard Bootstrap UCL	541.5	95% Bootstrap-t UCL	581.7
95% Hall's Bootstrap UCL	498.6	95% Percentile Bootstrap UCL	544.2
95% BCA Bootstrap UCL	536.3		
90% Chebyshev(Mean, Sd) UCL	665	95% Chebyshev(Mean, Sd) UCL	777.3
97.5% Chebyshev(Mean, Sd) UCL	933.1	99% Chebyshev(Mean, Sd) UCL	1239

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	122	Mean	293.3
Maximum	419	Median	328
SD	141.8	Std. Error of Mean	57.9
Coefficient of Variation	0.484	Skewness	-0.281
Mean of logged Data	5.561	SD of logged Data	0.565

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	410	95% Adjusted-CLT UCL (Chen-1995)	381.5
		95% Modified-t UCL (Johnson-1978)	408.9

Nonparametric Distribution Free UCLs

95% CLT UCL	388.6	95% Jackknife UCL	410
95% Standard Bootstrap UCL	379.4	95% Bootstrap-t UCL	407
95% Hall's Bootstrap UCL	352.9	95% Percentile Bootstrap UCL	387.7
95% BCA Bootstrap UCL	372.7		
90% Chebyshev(Mean, Sd) UCL	467	95% Chebyshev(Mean, Sd) UCL	545.7
97.5% Chebyshev(Mean, Sd) UCL	654.9	99% Chebyshev(Mean, Sd) UCL	869.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	253	Mean	642.7
Maximum	937	Median	712
SD	317.8	Std. Error of Mean	129.7
Coefficient of Variation	0.494	Skewness	-0.28
Mean of logged Data	6.338	SD of logged Data	0.583

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	904.1	95% Adjusted-CLT UCL (Chen-1995)	840.2
		95% Modified-t UCL (Johnson-1978)	901.6

Nonparametric Distribution Free UCLs

95% CLT UCL	856	95% Jackknife UCL	904.1
95% Standard Bootstrap UCL	839.8	95% Bootstrap-t UCL	894.3
95% Hall's Bootstrap UCL	777.6	95% Percentile Bootstrap UCL	827.3
95% BCA Bootstrap UCL	817.8		
90% Chebyshev(Mean, Sd) UCL	1032	95% Chebyshev(Mean, Sd) UCL	1208
97.5% Chebyshev(Mean, Sd) UCL	1453	99% Chebyshev(Mean, Sd) UCL	1933

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	44.7	Mean	113.8
Maximum	167	Median	125.6
SD	57.19	Std. Error of Mean	23.35
Coefficient of Variation	0.503	Skewness	-0.227
Mean of logged Data	4.604	SD of logged Data	0.587

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	160.8	95% Adjusted-CLT UCL (Chen-1995)	149.9
		95% Modified-t UCL (Johnson-1978)	160.5

Nonparametric Distribution Free UCLs

95% CLT UCL	152.2	95% Jackknife UCL	160.8
95% Standard Bootstrap UCL	148.4	95% Bootstrap-t UCL	156.9
95% Hall's Bootstrap UCL	137.3	95% Percentile Bootstrap UCL	147.3
95% BCA Bootstrap UCL	146.6		
90% Chebyshev(Mean, Sd) UCL	183.8	95% Chebyshev(Mean, Sd) UCL	215.5
97.5% Chebyshev(Mean, Sd) UCL	259.6	99% Chebyshev(Mean, Sd) UCL	346.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	321	Mean	870.5
Maximum	1330	Median	925
SD	440.8	Std. Error of Mean	179.9
Coefficient of Variation	0.506	Skewness	-0.229
Mean of logged Data	6.634	SD of logged Data	0.603

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1233	95% Adjusted-CLT UCL (Chen-1995)	1149
		95% Modified-t UCL (Johnson-1978)	1230

Nonparametric Distribution Free UCLs

95% CLT UCL	1166	95% Jackknife UCL	1233
95% Standard Bootstrap UCL	1142	95% Bootstrap-t UCL	1228
95% Hall's Bootstrap UCL	1053	95% Percentile Bootstrap UCL	1127
95% BCA Bootstrap UCL	1127		
90% Chebyshev(Mean, Sd) UCL	1410	95% Chebyshev(Mean, Sd) UCL	1655
97.5% Chebyshev(Mean, Sd) UCL	1994	99% Chebyshev(Mean, Sd) UCL	2661

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.22	Mean	9.113
Maximum	13.1	Median	9.725
SD	3.87	Std. Error of Mean	1.58
Coefficient of Variation	0.425	Skewness	-0.342
Mean of logged Data	2.118	SD of logged Data	0.491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.3	95% Adjusted-CLT UCL (Chen-1995)	11.48
		95% Modified-t UCL (Johnson-1978)	12.26

Nonparametric Distribution Free UCLs

95% CLT UCL	11.71	95% Jackknife UCL	12.3
95% Standard Bootstrap UCL	11.49	95% Bootstrap-t UCL	12.05
95% Hall's Bootstrap UCL	11.27	95% Percentile Bootstrap UCL	11.54
95% BCA Bootstrap UCL	11.27		
90% Chebyshev(Mean, Sd) UCL	13.85	95% Chebyshev(Mean, Sd) UCL	16
97.5% Chebyshev(Mean, Sd) UCL	18.98	99% Chebyshev(Mean, Sd) UCL	24.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	208	Mean	453
Maximum	710	Median	463
SD	205.5	Std. Error of Mean	83.9
Coefficient of Variation	0.454	Skewness	-0.029
Mean of logged Data	6.017	SD of logged Data	0.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	622.1	95% Adjusted-CLT UCL (Chen-1995)	589.9
		95% Modified-t UCL (Johnson-1978)	621.9

Nonparametric Distribution Free UCLs

95% CLT UCL	591	95% Jackknife UCL	622.1
95% Standard Bootstrap UCL	577.7	95% Bootstrap-t UCL	645
95% Hall's Bootstrap UCL	567	95% Percentile Bootstrap UCL	585.7
95% BCA Bootstrap UCL	576.5		
90% Chebyshev(Mean, Sd) UCL	704.7	95% Chebyshev(Mean, Sd) UCL	818.7
97.5% Chebyshev(Mean, Sd) UCL	976.9	99% Chebyshev(Mean, Sd) UCL	1288

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.4	Mean	18.88
Maximum	23.8	Median	18.75
SD	4.302	Std. Error of Mean	1.756
Coefficient of Variation	0.228	Skewness	-0.974
Mean of logged Data	2.912	SD of logged Data	0.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.41	95% Adjusted-CLT UCL (Chen-1995)	21.02
		95% Modified-t UCL (Johnson-1978)	22.3

Nonparametric Distribution Free UCLs

95% CLT UCL	21.76	95% Jackknife UCL	22.41
95% Standard Bootstrap UCL	21.48	95% Bootstrap-t UCL	21.82
95% Hall's Bootstrap UCL	21.76	95% Percentile Bootstrap UCL	21.37
95% BCA Bootstrap UCL	20.94		
90% Chebyshev(Mean, Sd) UCL	24.14	95% Chebyshev(Mean, Sd) UCL	26.53
97.5% Chebyshev(Mean, Sd) UCL	29.84	99% Chebyshev(Mean, Sd) UCL	36.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	133	Mean	339
Maximum	499	Median	381.5
SD	154.8	Std. Error of Mean	63.19
Coefficient of Variation	0.457	Skewness	-0.539

Mean of logged Data	5.712	SD of logged Data	0.56

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	466.3	95% Adjusted-CLT UCL (Chen-1995)	428.1
		95% Modified-t UCL (Johnson-1978)	464

Nonparametric Distribution Free UCLs

95% CLT UCL	442.9	95% Jackknife UCL	466.3
95% Standard Bootstrap UCL	434.9	95% Bootstrap-t UCL	445.9
95% Hall's Bootstrap UCL	408.5	95% Percentile Bootstrap UCL	429
95% BCA Bootstrap UCL	417.3		
90% Chebyshev(Mean, Sd) UCL	528.6	95% Chebyshev(Mean, Sd) UCL	614.4
97.5% Chebyshev(Mean, Sd) UCL	733.6	99% Chebyshev(Mean, Sd) UCL	967.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	332	Mean	866.2
Maximum	1290	Median	959
SD	426.1	Std. Error of Mean	173.9
Coefficient of Variation	0.492	Skewness	-0.299
Mean of logged Data	6.637	SD of logged Data	0.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1217	95% Adjusted-CLT UCL (Chen-1995)	1130
		95% Modified-t UCL (Johnson-1978)	1213

Nonparametric Distribution Free UCLs

95% CLT UCL	1152	95% Jackknife UCL	1217
95% Standard Bootstrap UCL	1129	95% Bootstrap-t UCL	1221
95% Hall's Bootstrap UCL	1049	95% Percentile Bootstrap UCL	1126
95% BCA Bootstrap UCL	1101		

90% Chebyshev(Mean, Sd) UCL	1388	95% Chebyshev(Mean, Sd) UCL	1624
97.5% Chebyshev(Mean, Sd) UCL	1952	99% Chebyshev(Mean, Sd) UCL	2597

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:19:30 PM
From File	Thompson H.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	9.65	Mean	11.01
Maximum	12.4	Median	11.3
SD	1.045	Std. Error of Mean	0.427
Coefficient of Variation	0.0949	Skewness	-0.241
Mean of logged Data	2.395	SD of logged Data	0.0961

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.87	95% Adjusted-CLT UCL (Chen-1995)	11.67
		95% Modified-t UCL (Johnson-1978)	11.86

Nonparametric Distribution Free UCLs

95% CLT UCL	11.71	95% Jackknife UCL	11.87
95% Standard Bootstrap UCL	11.65	95% Bootstrap-t UCL	11.79
95% Hall's Bootstrap UCL	11.57	95% Percentile Bootstrap UCL	11.64
95% BCA Bootstrap UCL	11.58		
90% Chebyshev(Mean, Sd) UCL	12.29	95% Chebyshev(Mean, Sd) UCL	12.87
97.5% Chebyshev(Mean, Sd) UCL	13.68	99% Chebyshev(Mean, Sd) UCL	15.26

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.8	Mean	13.58
Maximum	16	Median	13.15
SD	1.466	Std. Error of Mean	0.599
Coefficient of Variation	0.108	Skewness	0.825

Mean of logged Data	2.604	SD of logged Data	0.106

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.79	95% Adjusted-CLT UCL (Chen-1995)	14.78
		95% Modified-t UCL (Johnson-1978)	14.82

Nonparametric Distribution Free UCLs

95% CLT UCL	14.57	95% Jackknife UCL	14.79
95% Standard Bootstrap UCL	14.49	95% Bootstrap-t UCL	15.7
95% Hall's Bootstrap UCL	23.88	95% Percentile Bootstrap UCL	14.53
95% BCA Bootstrap UCL	14.58		
90% Chebyshev(Mean, Sd) UCL	15.38	95% Chebyshev(Mean, Sd) UCL	16.19
97.5% Chebyshev(Mean, Sd) UCL	17.32	99% Chebyshev(Mean, Sd) UCL	19.54

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	38.9	Mean	41.38
Maximum	47.6	Median	40.25
SD	3.134	Std. Error of Mean	1.279
Coefficient of Variation	0.0757	Skewness	2.142
Mean of logged Data	3.721	SD of logged Data	0.0721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.96	95% Adjusted-CLT UCL (Chen-1995)	44.68
		95% Modified-t UCL (Johnson-1978)	44.15

Nonparametric Distribution Free UCLs

95% CLT UCL	43.49	95% Jackknife UCL	43.96
95% Standard Bootstrap UCL	43.28	95% Bootstrap-t UCL	49.41
95% Hall's Bootstrap UCL	56.33	95% Percentile Bootstrap UCL	43.65
95% BCA Bootstrap UCL	44.08		
90% Chebyshev(Mean, Sd) UCL	45.22	95% Chebyshev(Mean, Sd) UCL	46.96
97.5% Chebyshev(Mean, Sd) UCL	49.37	99% Chebyshev(Mean, Sd) UCL	54.11

Suggested UCL to Use

95% Student's-t UCL	43.96	or 95% Modified-t UCL	44.15

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.61	Mean	9.743
Maximum	20.9	Median	7.96
SD	6.45	Std. Error of Mean	2.633
Coefficient of Variation	0.662	Skewness	1.157
Mean of logged Data	2.099	SD of logged Data	0.651

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.05	95% Adjusted-CLT UCL (Chen-1995)	15.4
		95% Modified-t UCL (Johnson-1978)	15.26

Nonparametric Distribution Free UCLs

95% CLT UCL	14.07	95% Jackknife UCL	15.05
95% Standard Bootstrap UCL	13.72	95% Bootstrap-t UCL	17.3
95% Hall's Bootstrap UCL	22.28	95% Percentile Bootstrap UCL	13.92
95% BCA Bootstrap UCL	14.6		
90% Chebyshev(Mean, Sd) UCL	17.64	95% Chebyshev(Mean, Sd) UCL	21.22
97.5% Chebyshev(Mean, Sd) UCL	26.19	99% Chebyshev(Mean, Sd) UCL	35.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.7	Mean	42.98
Maximum	106	Median	32.35
SD	33.9	Std. Error of Mean	13.84
Coefficient of Variation	0.789	Skewness	1.604
Mean of logged Data	3.529	SD of logged Data	0.732

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	70.87	95% Adjusted-CLT UCL (Chen-1995)	75.43
		95% Modified-t UCL (Johnson-1978)	72.38

Nonparametric Distribution Free UCLs

95% CLT UCL	65.75	95% Jackknife UCL	70.87
95% Standard Bootstrap UCL	63.64	95% Bootstrap-t UCL	108.9
95% Hall's Bootstrap UCL	160.7	95% Percentile Bootstrap UCL	64.75
95% BCA Bootstrap UCL	70.85		
90% Chebyshev(Mean, Sd) UCL	84.5	95% Chebyshev(Mean, Sd) UCL	103.3
97.5% Chebyshev(Mean, Sd) UCL	129.4	99% Chebyshev(Mean, Sd) UCL	180.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41	Mean	114.8
Maximum	251	Median	93.65
SD	73.93	Std. Error of Mean	30.18
Coefficient of Variation	0.644	Skewness	1.514
Mean of logged Data	4.585	SD of logged Data	0.611

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	175.6	95% Adjusted-CLT UCL (Chen-1995)	184.3
		95% Modified-t UCL (Johnson-1978)	178.7

Nonparametric Distribution Free UCLs

95% CLT UCL	164.4	95% Jackknife UCL	175.6
95% Standard Bootstrap UCL	159.5	95% Bootstrap-t UCL	245.4
95% Hall's Bootstrap UCL	461.9	95% Percentile Bootstrap UCL	160.9
95% BCA Bootstrap UCL	172.2		
90% Chebyshev(Mean, Sd) UCL	205.3	95% Chebyshev(Mean, Sd) UCL	246.3
97.5% Chebyshev(Mean, Sd) UCL	303.2	99% Chebyshev(Mean, Sd) UCL	415.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	390	Mean	749.2
Maximum	1080	Median	718.5
SD	281.7	Std. Error of Mean	115
Coefficient of Variation	0.376	Skewness	0.0453
Mean of logged Data	6.555	SD of logged Data	0.402

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	980.9	95% Adjusted-CLT UCL (Chen-1995)	940.6
		95% Modified-t UCL (Johnson-1978)	981.3

Nonparametric Distribution Free UCLs

95% CLT UCL	938.4	95% Jackknife UCL	980.9
95% Standard Bootstrap UCL	921.6	95% Bootstrap-t UCL	982.8
95% Hall's Bootstrap UCL	887.1	95% Percentile Bootstrap UCL	920.2
95% BCA Bootstrap UCL	932		
90% Chebyshev(Mean, Sd) UCL	1094	95% Chebyshev(Mean, Sd) UCL	1251
97.5% Chebyshev(Mean, Sd) UCL	1467	99% Chebyshev(Mean, Sd) UCL	1894

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	473	Mean	1017
Maximum	2100	Median	849
SD	593.5	Std. Error of Mean	242.3
Coefficient of Variation	0.584	Skewness	1.468
Mean of logged Data	6.799	SD of logged Data	0.534

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1505	95% Adjusted-CLT UCL (Chen-1995)	1570
		95% Modified-t UCL (Johnson-1978)	1529

Nonparametric Distribution Free UCLs

95% CLT UCL	1415	95% Jackknife UCL	1505
95% Standard Bootstrap UCL	1380	95% Bootstrap-t UCL	2088
95% Hall's Bootstrap UCL	3152	95% Percentile Bootstrap UCL	1405
95% BCA Bootstrap UCL	1497		
90% Chebyshev(Mean, Sd) UCL	1744	95% Chebyshev(Mean, Sd) UCL	2073
97.5% Chebyshev(Mean, Sd) UCL	2530	99% Chebyshev(Mean, Sd) UCL	3427

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	611	Mean	1279
Maximum	2460	Median	1073
SD	686.6	Std. Error of Mean	280.3
Coefficient of Variation	0.537	Skewness	1.138
Mean of logged Data	7.041	SD of logged Data	0.513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1844	95% Adjusted-CLT UCL (Chen-1995)	1879
		95% Modified-t UCL (Johnson-1978)	1865

Nonparametric Distribution Free UCLs

95% CLT UCL	1740	95% Jackknife UCL	1844
95% Standard Bootstrap UCL	1704	95% Bootstrap-t UCL	2157
95% Hall's Bootstrap UCL	2542	95% Percentile Bootstrap UCL	1724
95% BCA Bootstrap UCL	1792		
90% Chebyshev(Mean, Sd) UCL	2120	95% Chebyshev(Mean, Sd) UCL	2500
97.5% Chebyshev(Mean, Sd) UCL	3029	99% Chebyshev(Mean, Sd) UCL	4068

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	289	Mean	646
Maximum	1180	Median	562.5
SD	325.9	Std. Error of Mean	133
Coefficient of Variation	0.504	Skewness	0.865
Mean of logged Data	6.365	SD of logged Data	0.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	914.1	95% Adjusted-CLT UCL (Chen-1995)	915.1
		95% Modified-t UCL (Johnson-1978)	921.9

Nonparametric Distribution Free UCLs

95% CLT UCL	864.8	95% Jackknife UCL	914.1
95% Standard Bootstrap UCL	848.1	95% Bootstrap-t UCL	1029
95% Hall's Bootstrap UCL	1112	95% Percentile Bootstrap UCL	863.8
95% BCA Bootstrap UCL	889.2		
90% Chebyshev(Mean, Sd) UCL	1045	95% Chebyshev(Mean, Sd) UCL	1226
97.5% Chebyshev(Mean, Sd) UCL	1477	99% Chebyshev(Mean, Sd) UCL	1970

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	262	Mean	522.7
Maximum	1050	Median	434
SD	294.1	Std. Error of Mean	120.1
Coefficient of Variation	0.563	Skewness	1.369
Mean of logged Data	6.141	SD of logged Data	0.518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	764.6	95% Adjusted-CLT UCL (Chen-1995)	791.9

		95% Modified-t UCL (Johnson-1978)	775.8

Nonparametric Distribution Free UCLs

95% CLT UCL	720.2	95% Jackknife UCL	764.6
95% Standard Bootstrap UCL	703.8	95% Bootstrap-t UCL	893.2
95% Hall's Bootstrap UCL	1512	95% Percentile Bootstrap UCL	726.7
95% BCA Bootstrap UCL	757.3		
90% Chebyshev(Mean, Sd) UCL	882.9	95% Chebyshev(Mean, Sd) UCL	1046
97.5% Chebyshev(Mean, Sd) UCL	1273	99% Chebyshev(Mean, Sd) UCL	1717

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	485	Mean	1079
Maximum	2190	Median	889
SD	629.2	Std. Error of Mean	256.9
Coefficient of Variation	0.583	Skewness	1.269
Mean of logged Data	6.854	SD of logged Data	0.551

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1597	95% Adjusted-CLT UCL (Chen-1995)	1644
		95% Modified-t UCL (Johnson-1978)	1619

Nonparametric Distribution Free UCLs

95% CLT UCL	1502	95% Jackknife UCL	1597
95% Standard Bootstrap UCL	1475	95% Bootstrap-t UCL	2202
95% Hall's Bootstrap UCL	3344	95% Percentile Bootstrap UCL	1500
95% BCA Bootstrap UCL	1516		
90% Chebyshev(Mean, Sd) UCL	1850	95% Chebyshev(Mean, Sd) UCL	2199
97.5% Chebyshev(Mean, Sd) UCL	2683	99% Chebyshev(Mean, Sd) UCL	3635

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	72.7	Mean	152.8
Maximum	301	Median	126
SD	82.94	Std. Error of Mean	33.86
Coefficient of Variation	0.543	Skewness	1.354
Mean of logged Data	4.919	SD of logged Data	0.504

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	221	95% Adjusted-CLT UCL (Chen-1995)	228.5
		95% Modified-t UCL (Johnson-1978)	224.1

Nonparametric Distribution Free UCLs

95% CLT UCL	208.5	95% Jackknife UCL	221
95% Standard Bootstrap UCL	203.5	95% Bootstrap-t UCL	276.2
95% Hall's Bootstrap UCL	519.3	95% Percentile Bootstrap UCL	206.4
95% BCA Bootstrap UCL	217.3		
90% Chebyshev(Mean, Sd) UCL	254.4	95% Chebyshev(Mean, Sd) UCL	300.4
97.5% Chebyshev(Mean, Sd) UCL	364.2	99% Chebyshev(Mean, Sd) UCL	489.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	607	Mean	1324
Maximum	2600	Median	1129
SD	713.1	Std. Error of Mean	291.1
Coefficient of Variation	0.538	Skewness	1.32
Mean of logged Data	7.078	SD of logged Data	0.508

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1911	95% Adjusted-CLT UCL (Chen-1995)	1971
		95% Modified-t UCL (Johnson-1978)	1937

Nonparametric Distribution Free UCLs

95% CLT UCL	1803	95% Jackknife UCL	1911

95% Standard Bootstrap UCL	1754	95% Bootstrap-t UCL	2248
95% Hall's Bootstrap UCL	4292	95% Percentile Bootstrap UCL	1769
95% BCA Bootstrap UCL	1877		
90% Chebyshev(Mean, Sd) UCL	2198	95% Chebyshev(Mean, Sd) UCL	2593
97.5% Chebyshev(Mean, Sd) UCL	3142	99% Chebyshev(Mean, Sd) UCL	4221

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.9	Mean	13.88
Maximum	34.4	Median	11.35
SD	10.9	Std. Error of Mean	4.448
Coefficient of Variation	0.785	Skewness	1.67
Mean of logged Data	2.397	SD of logged Data	0.748

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.84	95% Adjusted-CLT UCL (Chen-1995)	24.44
		95% Modified-t UCL (Johnson-1978)	23.35

Nonparametric Distribution Free UCLs

95% CLT UCL	21.2	95% Jackknife UCL	22.84
95% Standard Bootstrap UCL	20.6	95% Bootstrap-t UCL	30.5
95% Hall's Bootstrap UCL	55.14	95% Percentile Bootstrap UCL	20.62
95% BCA Bootstrap UCL	23.15		
90% Chebyshev(Mean, Sd) UCL	27.23	95% Chebyshev(Mean, Sd) UCL	33.27
97.5% Chebyshev(Mean, Sd) UCL	41.66	99% Chebyshev(Mean, Sd) UCL	58.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	415	Mean	799.7
Maximum	1500	Median	673.5

SD	403.6	Std. Error of Mean	164.7
Coefficient of Variation	0.505	Skewness	1.196
Mean of logged Data	6.587	SD of logged Data	0.474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1132	95% Adjusted-CLT UCL (Chen-1995)	1157
		95% Modified-t UCL (Johnson-1978)	1145

Nonparametric Distribution Free UCLs

95% CLT UCL	1071	95% Jackknife UCL	1132
95% Standard Bootstrap UCL	1048	95% Bootstrap-t UCL	1366
95% Hall's Bootstrap UCL	2248	95% Percentile Bootstrap UCL	1057
95% BCA Bootstrap UCL	1106		
90% Chebyshev(Mean, Sd) UCL	1294	95% Chebyshev(Mean, Sd) UCL	1518
97.5% Chebyshev(Mean, Sd) UCL	1829	99% Chebyshev(Mean, Sd) UCL	2439

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.3	Mean	24.67
Maximum	43.1	Median	23.2
SD	12.89	Std. Error of Mean	5.263
Coefficient of Variation	0.523	Skewness	0.348
Mean of logged Data	3.076	SD of logged Data	0.578

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.27	95% Adjusted-CLT UCL (Chen-1995)	34.12
		95% Modified-t UCL (Johnson-1978)	35.4

Nonparametric Distribution Free UCLs

95% CLT UCL	33.32	95% Jackknife UCL	35.27
95% Standard Bootstrap UCL	32.54	95% Bootstrap-t UCL	40.13
95% Hall's Bootstrap UCL	36.78	95% Percentile Bootstrap UCL	32.4
95% BCA Bootstrap UCL	32.57		
90% Chebyshev(Mean, Sd) UCL	40.46	95% Chebyshev(Mean, Sd) UCL	47.61

97.5% Chebyshev(Mean, Sd) UCL	57.53	99% Chebyshev(Mean, Sd) UCL	77.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	210	Mean	544.3
Maximum	1120	Median	452
SD	323.4	Std. Error of Mean	132
Coefficient of Variation	0.594	Skewness	1.295
Mean of logged Data	6.161	SD of logged Data	0.576

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	810.3	95% Adjusted-CLT UCL (Chen-1995)	836.1
		95% Modified-t UCL (Johnson-1978)	822

Nonparametric Distribution Free UCLs

95% CLT UCL	761.5	95% Jackknife UCL	810.3
95% Standard Bootstrap UCL	741.3	95% Bootstrap-t UCL	1096
95% Hall's Bootstrap UCL	2120	95% Percentile Bootstrap UCL	745.7
95% BCA Bootstrap UCL	798.3		
90% Chebyshev(Mean, Sd) UCL	940.4	95% Chebyshev(Mean, Sd) UCL	1120
97.5% Chebyshev(Mean, Sd) UCL	1369	99% Chebyshev(Mean, Sd) UCL	1858

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	603	Mean	1349
Maximum	2720	Median	1116
SD	769.6	Std. Error of Mean	314.2
Coefficient of Variation	0.57	Skewness	1.317
Mean of logged Data	7.083	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1982	95% Adjusted-CLT UCL (Chen-1995)	2046
		95% Modified-t UCL (Johnson-1978)	2010

Nonparametric Distribution Free UCLs

95% CLT UCL	1866	95% Jackknife UCL	1982
95% Standard Bootstrap UCL	1837	95% Bootstrap-t UCL	2746
95% Hall's Bootstrap UCL	4357	95% Percentile Bootstrap UCL	1832
95% BCA Bootstrap UCL	1962		
90% Chebyshev(Mean, Sd) UCL	2292	95% Chebyshev(Mean, Sd) UCL	2718
97.5% Chebyshev(Mean, Sd) UCL	3311	99% Chebyshev(Mean, Sd) UCL	4475

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:29:05 PM
From File	Thompson I.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.2	Mean	14.93
Maximum	24.1	Median	13
SD	4.582	Std. Error of Mean	1.871
Coefficient of Variation	0.307	Skewness	2.246
Mean of logged Data	2.672	SD of logged Data	0.259

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.7	95% Adjusted-CLT UCL (Chen-1995)	19.84
		95% Modified-t UCL (Johnson-1978)	18.99

Nonparametric Distribution Free UCLs

95% CLT UCL	18.01	95% Jackknife UCL	18.7
95% Standard Bootstrap UCL	17.67	95% Bootstrap-t UCL	42.01
95% Hall's Bootstrap UCL	35.39	95% Percentile Bootstrap UCL	18.4
95% BCA Bootstrap UCL	19.02		
90% Chebyshev(Mean, Sd) UCL	20.55	95% Chebyshev(Mean, Sd) UCL	23.09
97.5% Chebyshev(Mean, Sd) UCL	26.62	99% Chebyshev(Mean, Sd) UCL	33.55

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.2	Mean	27.48
Maximum	74.9	Median	17.4
SD	23.33	Std. Error of Mean	9.526
Coefficient of Variation	0.849	Skewness	2.402
Mean of logged Data	3.122	SD of logged Data	0.596

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.68	95% Adjusted-CLT UCL (Chen-1995)	53.13
		95% Modified-t UCL (Johnson-1978)	48.24

Nonparametric Distribution Free UCLs

95% CLT UCL	43.15	95% Jackknife UCL	46.68
95% Standard Bootstrap UCL	41.79	95% Bootstrap-t UCL	479
95% Hall's Bootstrap UCL	215.9	95% Percentile Bootstrap UCL	45.95
95% BCA Bootstrap UCL	47.58		
90% Chebyshev(Mean, Sd) UCL	56.06	95% Chebyshev(Mean, Sd) UCL	69.01
97.5% Chebyshev(Mean, Sd) UCL	86.97	99% Chebyshev(Mean, Sd) UCL	122.3

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	69.01

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.6	Mean	51.38
Maximum	70.1	Median	48.1
SD	9.321	Std. Error of Mean	3.805
Coefficient of Variation	0.181	Skewness	2.276
Mean of logged Data	3.928	SD of logged Data	0.162

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.05	95% Adjusted-CLT UCL (Chen-1995)	61.42
		95% Modified-t UCL (Johnson-1978)	59.64

Nonparametric Distribution Free UCLs

95% CLT UCL	57.64	95% Jackknife UCL	59.05
95% Standard Bootstrap UCL	57.25	95% Bootstrap-t UCL	85.87
95% Hall's Bootstrap UCL	88.31	95% Percentile Bootstrap UCL	58.73
95% BCA Bootstrap UCL	59.85		
90% Chebyshev(Mean, Sd) UCL	62.8	95% Chebyshev(Mean, Sd) UCL	67.97
97.5% Chebyshev(Mean, Sd) UCL	75.15	99% Chebyshev(Mean, Sd) UCL	89.25

Suggested UCL to Use

95% Student's-t UCL	59.05	or 95% Modified-t UCL	59.64

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.7	Mean	29.18
Maximum	39.5	Median	31.6
SD	9.638	Std. Error of Mean	3.935
Coefficient of Variation	0.33	Skewness	-0.79
Mean of logged Data	3.316	SD of logged Data	0.394

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.11	95% Adjusted-CLT UCL (Chen-1995)	34.3
		95% Modified-t UCL (Johnson-1978)	36.9

Nonparametric Distribution Free UCLs

95% CLT UCL	35.66	95% Jackknife UCL	37.11
95% Standard Bootstrap UCL	35.12	95% Bootstrap-t UCL	35.86
95% Hall's Bootstrap UCL	34.27	95% Percentile Bootstrap UCL	34.88
95% BCA Bootstrap UCL	34.13		
90% Chebyshev(Mean, Sd) UCL	40.99	95% Chebyshev(Mean, Sd) UCL	46.33
97.5% Chebyshev(Mean, Sd) UCL	53.76	99% Chebyshev(Mean, Sd) UCL	68.33

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.7	Mean	103.9
Maximum	160	Median	100.9
SD	40.92	Std. Error of Mean	16.71
Coefficient of Variation	0.394	Skewness	0.185
Mean of logged Data	4.572	SD of logged Data	0.423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	137.5	95% Adjusted-CLT UCL (Chen-1995)	132.7
		95% Modified-t UCL (Johnson-1978)	137.7

Nonparametric Distribution Free UCLs

95% CLT UCL	131.3	95% Jackknife UCL	137.5
95% Standard Bootstrap UCL	129.7	95% Bootstrap-t UCL	145.8
95% Hall's Bootstrap UCL	150.6	95% Percentile Bootstrap UCL	129
95% BCA Bootstrap UCL	128.6		
90% Chebyshev(Mean, Sd) UCL	154	95% Chebyshev(Mean, Sd) UCL	176.7
97.5% Chebyshev(Mean, Sd) UCL	208.2	99% Chebyshev(Mean, Sd) UCL	270.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	231	Mean	377.8
Maximum	673	Median	307
SD	178.4	Std. Error of Mean	72.81
Coefficient of Variation	0.472	Skewness	1.078
Mean of logged Data	5.85	SD of logged Data	0.441

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	524.6	95% Adjusted-CLT UCL (Chen-1995)	531.8
		95% Modified-t UCL (Johnson-1978)	529.9

Nonparametric Distribution Free UCLs

95% CLT UCL	497.6	95% Jackknife UCL	524.6
95% Standard Bootstrap UCL	486.3	95% Bootstrap-t UCL	665.6
95% Hall's Bootstrap UCL	1035	95% Percentile Bootstrap UCL	495.7
95% BCA Bootstrap UCL	519.2		
90% Chebyshev(Mean, Sd) UCL	596.3	95% Chebyshev(Mean, Sd) UCL	695.2
97.5% Chebyshev(Mean, Sd) UCL	832.6	99% Chebyshev(Mean, Sd) UCL	1102

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1550	Mean	2383
Maximum	3630	Median	2090
SD	896.7	Std. Error of Mean	366.1
Coefficient of Variation	0.376	Skewness	0.666
Mean of logged Data	7.719	SD of logged Data	0.366

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3121	95% Adjusted-CLT UCL (Chen-1995)	3092
		95% Modified-t UCL (Johnson-1978)	3138

Nonparametric Distribution Free UCLs

95% CLT UCL	2986	95% Jackknife UCL	3121
95% Standard Bootstrap UCL	2926	95% Bootstrap-t UCL	4175
95% Hall's Bootstrap UCL	3464	95% Percentile Bootstrap UCL	2948
95% BCA Bootstrap UCL	2990		
90% Chebyshev(Mean, Sd) UCL	3482	95% Chebyshev(Mean, Sd) UCL	3979
97.5% Chebyshev(Mean, Sd) UCL	4670	99% Chebyshev(Mean, Sd) UCL	6026

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1960	Mean	3102
Maximum	4730	Median	2780
SD	1133	Std. Error of Mean	462.7
Coefficient of Variation	0.365	Skewness	0.637
Mean of logged Data	7.985	SD of logged Data	0.358

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4034	95% Adjusted-CLT UCL (Chen-1995)	3991
		95% Modified-t UCL (Johnson-1978)	4054

Nonparametric Distribution Free UCLs

95% CLT UCL	3863	95% Jackknife UCL	4034
95% Standard Bootstrap UCL	3791	95% Bootstrap-t UCL	4612
95% Hall's Bootstrap UCL	4579	95% Percentile Bootstrap UCL	3815
95% BCA Bootstrap UCL	3848		
90% Chebyshev(Mean, Sd) UCL	4490	95% Chebyshev(Mean, Sd) UCL	5119
97.5% Chebyshev(Mean, Sd) UCL	5991	99% Chebyshev(Mean, Sd) UCL	7706

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2380	Mean	3668
Maximum	5670	Median	3275
SD	1346	Std. Error of Mean	549.3
Coefficient of Variation	0.367	Skewness	0.701
Mean of logged Data	8.153	SD of logged Data	0.357

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4775	95% Adjusted-CLT UCL (Chen-1995)	4740
		95% Modified-t UCL (Johnson-1978)	4801

Nonparametric Distribution Free UCLs

95% CLT UCL	4572	95% Jackknife UCL	4775
95% Standard Bootstrap UCL	4496	95% Bootstrap-t UCL	5350
95% Hall's Bootstrap UCL	5302	95% Percentile Bootstrap UCL	4525
95% BCA Bootstrap UCL	4657		
90% Chebyshev(Mean, Sd) UCL	5316	95% Chebyshev(Mean, Sd) UCL	6063
97.5% Chebyshev(Mean, Sd) UCL	7099	99% Chebyshev(Mean, Sd) UCL	9134

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1150	Mean	1795
Maximum	2820	Median	1615
SD	656.4	Std. Error of Mean	268
Coefficient of Variation	0.366	Skewness	0.775
Mean of logged Data	7.439	SD of logged Data	0.355

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2335	95% Adjusted-CLT UCL (Chen-1995)	2326
		95% Modified-t UCL (Johnson-1978)	2349

Nonparametric Distribution Free UCLs

95% CLT UCL	2236	95% Jackknife UCL	2335
95% Standard Bootstrap UCL	2197	95% Bootstrap-t UCL	2899
95% Hall's Bootstrap UCL	2342	95% Percentile Bootstrap UCL	2218
95% BCA Bootstrap UCL	2245		
90% Chebyshev(Mean, Sd) UCL	2599	95% Chebyshev(Mean, Sd) UCL	2963
97.5% Chebyshev(Mean, Sd) UCL	3469	99% Chebyshev(Mean, Sd) UCL	4461

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	903	Mean	1439
Maximum	2190	Median	1295
SD	530.6	Std. Error of Mean	216.6
Coefficient of Variation	0.369	Skewness	0.596
Mean of logged Data	7.216	SD of logged Data	0.363

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1875	95% Adjusted-CLT UCL (Chen-1995)	1852

		95% Modified-t UCL (Johnson-1978)	1884

Nonparametric Distribution Free UCLs

95% CLT UCL	1795	95% Jackknife UCL	1875
95% Standard Bootstrap UCL	1769	95% Bootstrap-t UCL	2114
95% Hall's Bootstrap UCL	2116	95% Percentile Bootstrap UCL	1764
95% BCA Bootstrap UCL	1788		
90% Chebyshev(Mean, Sd) UCL	2089	95% Chebyshev(Mean, Sd) UCL	2383
97.5% Chebyshev(Mean, Sd) UCL	2792	99% Chebyshev(Mean, Sd) UCL	3594

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1750	Mean	2885
Maximum	4360	Median	2565
SD	1103	Std. Error of Mean	450.3
Coefficient of Variation	0.382	Skewness	0.584
Mean of logged Data	7.907	SD of logged Data	0.378

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3792	95% Adjusted-CLT UCL (Chen-1995)	3740
		95% Modified-t UCL (Johnson-1978)	3810

Nonparametric Distribution Free UCLs

95% CLT UCL	3626	95% Jackknife UCL	3792
95% Standard Bootstrap UCL	3553	95% Bootstrap-t UCL	4494
95% Hall's Bootstrap UCL	4764	95% Percentile Bootstrap UCL	3600
95% BCA Bootstrap UCL	3632		
90% Chebyshev(Mean, Sd) UCL	4236	95% Chebyshev(Mean, Sd) UCL	4848
97.5% Chebyshev(Mean, Sd) UCL	5697	99% Chebyshev(Mean, Sd) UCL	7366

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	302	Mean	472.8
Maximum	720	Median	427.5
SD	169	Std. Error of Mean	68.99
Coefficient of Variation	0.357	Skewness	0.637
Mean of logged Data	6.107	SD of logged Data	0.351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	611.9	95% Adjusted-CLT UCL (Chen-1995)	605.5
		95% Modified-t UCL (Johnson-1978)	614.9

Nonparametric Distribution Free UCLs

95% CLT UCL	586.3	95% Jackknife UCL	611.9
95% Standard Bootstrap UCL	576.1	95% Bootstrap-t UCL	678
95% Hall's Bootstrap UCL	668.9	95% Percentile Bootstrap UCL	583.3
95% BCA Bootstrap UCL	583.3		
90% Chebyshev(Mean, Sd) UCL	679.8	95% Chebyshev(Mean, Sd) UCL	773.6
97.5% Chebyshev(Mean, Sd) UCL	903.7	99% Chebyshev(Mean, Sd) UCL	1159

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2540	Mean	3963
Maximum	6030	Median	3340
SD	1580	Std. Error of Mean	645.2
Coefficient of Variation	0.399	Skewness	0.669
Mean of logged Data	8.221	SD of logged Data	0.387

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5263	95% Adjusted-CLT UCL (Chen-1995)	5213
		95% Modified-t UCL (Johnson-1978)	5293

Nonparametric Distribution Free UCLs

95% CLT UCL	5025	95% Jackknife UCL	5263

95% Standard Bootstrap UCL	4928	95% Bootstrap-t UCL	7438
95% Hall's Bootstrap UCL	5932	95% Percentile Bootstrap UCL	5002
95% BCA Bootstrap UCL	5078		
90% Chebyshev(Mean, Sd) UCL	5899	95% Chebyshev(Mean, Sd) UCL	6776
97.5% Chebyshev(Mean, Sd) UCL	7993	99% Chebyshev(Mean, Sd) UCL	10383

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.1	Mean	42.27
Maximum	66.2	Median	45.25
SD	18.92	Std. Error of Mean	7.724
Coefficient of Variation	0.448	Skewness	-0.117
Mean of logged Data	3.646	SD of logged Data	0.505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.83	95% Adjusted-CLT UCL (Chen-1995)	54.58
		95% Modified-t UCL (Johnson-1978)	57.77

Nonparametric Distribution Free UCLs

95% CLT UCL	54.97	95% Jackknife UCL	57.83
95% Standard Bootstrap UCL	53.81	95% Bootstrap-t UCL	57.24
95% Hall's Bootstrap UCL	51.61	95% Percentile Bootstrap UCL	54.43
95% BCA Bootstrap UCL	52.97		
90% Chebyshev(Mean, Sd) UCL	65.44	95% Chebyshev(Mean, Sd) UCL	75.93
97.5% Chebyshev(Mean, Sd) UCL	90.5	99% Chebyshev(Mean, Sd) UCL	119.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	1360	Mean	2113
Maximum	3250	Median	1920
SD	754.5	Std. Error of Mean	308
Coefficient of Variation	0.357	Skewness	0.677
Mean of logged Data	7.604	SD of logged Data	0.349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2734	95% Adjusted-CLT UCL (Chen-1995)	2711
		95% Modified-t UCL (Johnson-1978)	2748

Nonparametric Distribution Free UCLs

95% CLT UCL	2620	95% Jackknife UCL	2734
95% Standard Bootstrap UCL	2570	95% Bootstrap-t UCL	3007
95% Hall's Bootstrap UCL	2920	95% Percentile Bootstrap UCL	2585
95% BCA Bootstrap UCL	2640		
90% Chebyshev(Mean, Sd) UCL	3037	95% Chebyshev(Mean, Sd) UCL	3456
97.5% Chebyshev(Mean, Sd) UCL	4037	99% Chebyshev(Mean, Sd) UCL	5178

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.7	Mean	91.73
Maximum	120	Median	101.9
SD	28.28	Std. Error of Mean	11.55
Coefficient of Variation	0.308	Skewness	-1.118
Mean of logged Data	4.467	SD of logged Data	0.377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	115	95% Adjusted-CLT UCL (Chen-1995)	105.1
		95% Modified-t UCL (Johnson-1978)	114.1

Nonparametric Distribution Free UCLs

95% CLT UCL	110.7	95% Jackknife UCL	115
95% Standard Bootstrap UCL	109.5	95% Bootstrap-t UCL	110.6

95% Hall's Bootstrap UCL	104.8	95% Percentile Bootstrap UCL	108.1
95% BCA Bootstrap UCL	106		
90% Chebyshev(Mean, Sd) UCL	126.4	95% Chebyshev(Mean, Sd) UCL	142.1
97.5% Chebyshev(Mean, Sd) UCL	163.8	99% Chebyshev(Mean, Sd) UCL	206.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1060	Mean	1837
Maximum	3100	Median	1545
SD	813.4	Std. Error of Mean	332.1
Coefficient of Variation	0.443	Skewness	0.868
Mean of logged Data	7.438	SD of logged Data	0.425

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2506	95% Adjusted-CLT UCL (Chen-1995)	2509
		95% Modified-t UCL (Johnson-1978)	2525

Nonparametric Distribution Free UCLs

95% CLT UCL	2383	95% Jackknife UCL	2506
95% Standard Bootstrap UCL	2337	95% Bootstrap-t UCL	3106
95% Hall's Bootstrap UCL	3821	95% Percentile Bootstrap UCL	2367
95% BCA Bootstrap UCL	2383		
90% Chebyshev(Mean, Sd) UCL	2833	95% Chebyshev(Mean, Sd) UCL	3284
97.5% Chebyshev(Mean, Sd) UCL	3910	99% Chebyshev(Mean, Sd) UCL	5141

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	2500	Mean	3877
Maximum	5860	Median	3340
SD	1503	Std. Error of Mean	613.8
Coefficient of Variation	0.388	Skewness	0.67
Mean of logged Data	8.202	SD of logged Data	0.377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5114	95% Adjusted-CLT UCL (Chen-1995)	5066
		95% Modified-t UCL (Johnson-1978)	5141

Nonparametric Distribution Free UCLs

95% CLT UCL	4886	95% Jackknife UCL	5114
95% Standard Bootstrap UCL	4787	95% Bootstrap-t UCL	7077
95% Hall's Bootstrap UCL	6137	95% Percentile Bootstrap UCL	4793
95% BCA Bootstrap UCL	4920		
90% Chebyshev(Mean, Sd) UCL	5718	95% Chebyshev(Mean, Sd) UCL	6552
97.5% Chebyshev(Mean, Sd) UCL	7710	99% Chebyshev(Mean, Sd) UCL	9984

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:30:16 PM
From File	Thompson J.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13	Mean	13.7
Maximum	14.3	Median	13.8
SD	0.559	Std. Error of Mean	0.228
Coefficient of Variation	0.0408	Skewness	-0.331
Mean of logged Data	2.617	SD of logged Data	0.041

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.16	95% Adjusted-CLT UCL (Chen-1995)	14.04
		95% Modified-t UCL (Johnson-1978)	14.15

Nonparametric Distribution Free UCLs

95% CLT UCL	14.08	95% Jackknife UCL	14.16
95% Standard Bootstrap UCL	14.04	95% Bootstrap-t UCL	14.12
95% Hall's Bootstrap UCL	13.96	95% Percentile Bootstrap UCL	14.03
95% BCA Bootstrap UCL	14		
90% Chebyshev(Mean, Sd) UCL	14.38	95% Chebyshev(Mean, Sd) UCL	14.69
97.5% Chebyshev(Mean, Sd) UCL	15.12	99% Chebyshev(Mean, Sd) UCL	15.97

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.6	Mean	25.53
Maximum	37.3	Median	21.95
SD	7.843	Std. Error of Mean	3.202
Coefficient of Variation	0.307	Skewness	0.951

Mean of logged Data	3.204	SD of logged Data	0.289

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.98	95% Adjusted-CLT UCL (Chen-1995)	32.13
		95% Modified-t UCL (Johnson-1978)	32.19

Nonparametric Distribution Free UCLs

95% CLT UCL	30.8	95% Jackknife UCL	31.98
95% Standard Bootstrap UCL	30.48	95% Bootstrap-t UCL	51.02
95% Hall's Bootstrap UCL	83.58	95% Percentile Bootstrap UCL	30.53
95% BCA Bootstrap UCL	31.17		
90% Chebyshev(Mean, Sd) UCL	35.14	95% Chebyshev(Mean, Sd) UCL	39.49
97.5% Chebyshev(Mean, Sd) UCL	45.53	99% Chebyshev(Mean, Sd) UCL	57.39

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48.4	Mean	50.58
Maximum	53.7	Median	49.6
SD	2.242	Std. Error of Mean	0.915
Coefficient of Variation	0.0443	Skewness	0.802
Mean of logged Data	3.923	SD of logged Data	0.0438

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.43	95% Adjusted-CLT UCL (Chen-1995)	52.41
		95% Modified-t UCL (Johnson-1978)	52.48

Nonparametric Distribution Free UCLs

95% CLT UCL	52.09	95% Jackknife UCL	52.43
95% Standard Bootstrap UCL	51.95	95% Bootstrap-t UCL	56.75
95% Hall's Bootstrap UCL	67.57	95% Percentile Bootstrap UCL	52.05
95% BCA Bootstrap UCL	52.03		
90% Chebyshev(Mean, Sd) UCL	53.33	95% Chebyshev(Mean, Sd) UCL	54.57
97.5% Chebyshev(Mean, Sd) UCL	56.3	99% Chebyshev(Mean, Sd) UCL	59.69

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	65.1	Mean	91.97
Maximum	120	Median	94.6
SD	23.26	Std. Error of Mean	9.496
Coefficient of Variation	0.253	Skewness	-0.0966
Mean of logged Data	4.493	SD of logged Data	0.262

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	111.1	95% Adjusted-CLT UCL (Chen-1995)	107.2
		95% Modified-t UCL (Johnson-1978)	111

Nonparametric Distribution Free UCLs

95% CLT UCL	107.6	95% Jackknife UCL	111.1
95% Standard Bootstrap UCL	105.9	95% Bootstrap-t UCL	111.6
95% Hall's Bootstrap UCL	102.6	95% Percentile Bootstrap UCL	106.3
95% BCA Bootstrap UCL	105.2		
90% Chebyshev(Mean, Sd) UCL	120.5	95% Chebyshev(Mean, Sd) UCL	133.4
97.5% Chebyshev(Mean, Sd) UCL	151.3	99% Chebyshev(Mean, Sd) UCL	186.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	264	Mean	346.5
Maximum	455	Median	335.5
SD	80.56	Std. Error of Mean	32.89
Coefficient of Variation	0.233	Skewness	0.28
Mean of logged Data	5.825	SD of logged Data	0.232

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	412.8	95% Adjusted-CLT UCL (Chen-1995)	404.6
		95% Modified-t UCL (Johnson-1978)	413.4

Nonparametric Distribution Free UCLs

95% CLT UCL	400.6	95% Jackknife UCL	412.8
95% Standard Bootstrap UCL	396	95% Bootstrap-t UCL	419.8
95% Hall's Bootstrap UCL	379.7	95% Percentile Bootstrap UCL	395.5
95% BCA Bootstrap UCL	400.2		
90% Chebyshev(Mean, Sd) UCL	445.2	95% Chebyshev(Mean, Sd) UCL	489.9
97.5% Chebyshev(Mean, Sd) UCL	551.9	99% Chebyshev(Mean, Sd) UCL	673.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	778	Mean	1037
Maximum	1380	Median	1009
SD	213	Std. Error of Mean	86.94
Coefficient of Variation	0.205	Skewness	0.661
Mean of logged Data	6.927	SD of logged Data	0.202

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1212	95% Adjusted-CLT UCL (Chen-1995)	1205
		95% Modified-t UCL (Johnson-1978)	1216

Nonparametric Distribution Free UCLs

95% CLT UCL	1180	95% Jackknife UCL	1212
95% Standard Bootstrap UCL	1167	95% Bootstrap-t UCL	1270
95% Hall's Bootstrap UCL	1366	95% Percentile Bootstrap UCL	1174
95% BCA Bootstrap UCL	1173		
90% Chebyshev(Mean, Sd) UCL	1297	95% Chebyshev(Mean, Sd) UCL	1416
97.5% Chebyshev(Mean, Sd) UCL	1580	99% Chebyshev(Mean, Sd) UCL	1902

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3800	Mean	6775
Maximum	8700	Median	6945
SD	1862	Std. Error of Mean	760.3
Coefficient of Variation	0.275	Skewness	-0.671
Mean of logged Data	8.784	SD of logged Data	0.311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8307	95% Adjusted-CLT UCL (Chen-1995)	7803
		95% Modified-t UCL (Johnson-1978)	8272

Nonparametric Distribution Free UCLs

95% CLT UCL	8026	95% Jackknife UCL	8307
95% Standard Bootstrap UCL	7887	95% Bootstrap-t UCL	8172
95% Hall's Bootstrap UCL	7984	95% Percentile Bootstrap UCL	7902
95% BCA Bootstrap UCL	7732		
90% Chebyshev(Mean, Sd) UCL	9056	95% Chebyshev(Mean, Sd) UCL	10089
97.5% Chebyshev(Mean, Sd) UCL	11523	99% Chebyshev(Mean, Sd) UCL	14340

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5020	Mean	7885
Maximum	9680	Median	8250
SD	1779	Std. Error of Mean	726.4
Coefficient of Variation	0.226	Skewness	-0.815
Mean of logged Data	8.949	SD of logged Data	0.249

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9349	95% Adjusted-CLT UCL (Chen-1995)	8822
		95% Modified-t UCL (Johnson-1978)	9309

Nonparametric Distribution Free UCLs

95% CLT UCL	9080	95% Jackknife UCL	9349
95% Standard Bootstrap UCL	8958	95% Bootstrap-t UCL	9088
95% Hall's Bootstrap UCL	8741	95% Percentile Bootstrap UCL	8930
95% BCA Bootstrap UCL	8813		
90% Chebyshev(Mean, Sd) UCL	10064	95% Chebyshev(Mean, Sd) UCL	11051
97.5% Chebyshev(Mean, Sd) UCL	12422	99% Chebyshev(Mean, Sd) UCL	15113

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6160	Mean	10363
Maximum	12900	Median	10850
SD	2561	Std. Error of Mean	1046
Coefficient of Variation	0.247	Skewness	-0.874
Mean of logged Data	9.216	SD of logged Data	0.279

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12471	95% Adjusted-CLT UCL (Chen-1995)	11685
		95% Modified-t UCL (Johnson-1978)	12408

Nonparametric Distribution Free UCLs

95% CLT UCL	12083	95% Jackknife UCL	12471
95% Standard Bootstrap UCL	11892	95% Bootstrap-t UCL	12103
95% Hall's Bootstrap UCL	11609	95% Percentile Bootstrap UCL	11900
95% BCA Bootstrap UCL	11620		
90% Chebyshev(Mean, Sd) UCL	13500	95% Chebyshev(Mean, Sd) UCL	14922
97.5% Chebyshev(Mean, Sd) UCL	16894	99% Chebyshev(Mean, Sd) UCL	20768

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3450	Mean	5015
Maximum	6150	Median	5195
SD	1036	Std. Error of Mean	423
Coefficient of Variation	0.207	Skewness	-0.574
Mean of logged Data	8.501	SD of logged Data	0.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5867	95% Adjusted-CLT UCL (Chen-1995)	5605
		95% Modified-t UCL (Johnson-1978)	5851

Nonparametric Distribution Free UCLs

95% CLT UCL	5711	95% Jackknife UCL	5867
95% Standard Bootstrap UCL	5654	95% Bootstrap-t UCL	5748
95% Hall's Bootstrap UCL	5575	95% Percentile Bootstrap UCL	5670
95% BCA Bootstrap UCL	5557		
90% Chebyshev(Mean, Sd) UCL	6284	95% Chebyshev(Mean, Sd) UCL	6859
97.5% Chebyshev(Mean, Sd) UCL	7656	99% Chebyshev(Mean, Sd) UCL	9224

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2690	Mean	4142

Maximum	5180	Median	4335
SD	929.8	Std. Error of Mean	379.6
Coefficient of Variation	0.225	Skewness	-0.689
Mean of logged Data	8.305	SD of logged Data	0.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4907	95% Adjusted-CLT UCL (Chen-1995)	4652
		95% Modified-t UCL (Johnson-1978)	4889

Nonparametric Distribution Free UCLs

95% CLT UCL	4766	95% Jackknife UCL	4907
95% Standard Bootstrap UCL	4708	95% Bootstrap-t UCL	4768
95% Hall's Bootstrap UCL	4613	95% Percentile Bootstrap UCL	4682
95% BCA Bootstrap UCL	4617		
90% Chebyshev(Mean, Sd) UCL	5280	95% Chebyshev(Mean, Sd) UCL	5796
97.5% Chebyshev(Mean, Sd) UCL	6512	99% Chebyshev(Mean, Sd) UCL	7919

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5060	Mean	8285
Maximum	10800	Median	8190
SD	2241	Std. Error of Mean	915
Coefficient of Variation	0.271	Skewness	-0.189
Mean of logged Data	8.989	SD of logged Data	0.289

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10129	95% Adjusted-CLT UCL (Chen-1995)	9715
		95% Modified-t UCL (Johnson-1978)	10117

Nonparametric Distribution Free UCLs

95% CLT UCL	9790	95% Jackknife UCL	10129

95% Standard Bootstrap UCL	9651	95% Bootstrap-t UCL	10349
95% Hall's Bootstrap UCL	10289	95% Percentile Bootstrap UCL	9618
95% BCA Bootstrap UCL	9537		
90% Chebyshev(Mean, Sd) UCL	11030	95% Chebyshev(Mean, Sd) UCL	12273
97.5% Chebyshev(Mean, Sd) UCL	13999	99% Chebyshev(Mean, Sd) UCL	17389

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	849	Mean	1377
Maximum	1710	Median	1450
SD	325.4	Std. Error of Mean	132.8
Coefficient of Variation	0.236	Skewness	-0.853
Mean of logged Data	7.2	SD of logged Data	0.264

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1644	95% Adjusted-CLT UCL (Chen-1995)	1546
		95% Modified-t UCL (Johnson-1978)	1636

Nonparametric Distribution Free UCLs

95% CLT UCL	1595	95% Jackknife UCL	1644
95% Standard Bootstrap UCL	1574	95% Bootstrap-t UCL	1613
95% Hall's Bootstrap UCL	1540	95% Percentile Bootstrap UCL	1563
95% BCA Bootstrap UCL	1543		
90% Chebyshev(Mean, Sd) UCL	1775	95% Chebyshev(Mean, Sd) UCL	1956
97.5% Chebyshev(Mean, Sd) UCL	2206	99% Chebyshev(Mean, Sd) UCL	2698

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6500	Mean	11367
Maximum	14900	Median	11950
SD	2848	Std. Error of Mean	1163
Coefficient of Variation	0.251	Skewness	-0.906
Mean of logged Data	9.307	SD of logged Data	0.287

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13709	95% Adjusted-CLT UCL (Chen-1995)	12820
		95% Modified-t UCL (Johnson-1978)	13638

Nonparametric Distribution Free UCLs

95% CLT UCL	13279	95% Jackknife UCL	13709
95% Standard Bootstrap UCL	13131	95% Bootstrap-t UCL	13238
95% Hall's Bootstrap UCL	12958	95% Percentile Bootstrap UCL	13000
95% BCA Bootstrap UCL	12767		
90% Chebyshev(Mean, Sd) UCL	14855	95% Chebyshev(Mean, Sd) UCL	16435
97.5% Chebyshev(Mean, Sd) UCL	18627	99% Chebyshev(Mean, Sd) UCL	22935

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	116	Mean	164.3
Maximum	247	Median	150
SD	46.37	Std. Error of Mean	18.93
Coefficient of Variation	0.282	Skewness	1.307
Mean of logged Data	5.072	SD of logged Data	0.263

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	202.5	95% Adjusted-CLT UCL (Chen-1995)	206.3
		95% Modified-t UCL (Johnson-1978)	204.2

Nonparametric Distribution Free UCLs

95% CLT UCL	195.5	95% Jackknife UCL	202.5
95% Standard Bootstrap UCL	192.5	95% Bootstrap-t UCL	245.5
95% Hall's Bootstrap UCL	393	95% Percentile Bootstrap UCL	194
95% BCA Bootstrap UCL	200.3		
90% Chebyshev(Mean, Sd) UCL	221.1	95% Chebyshev(Mean, Sd) UCL	246.9
97.5% Chebyshev(Mean, Sd) UCL	282.6	99% Chebyshev(Mean, Sd) UCL	352.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4060	Mean	5698
Maximum	6740	Median	6025
SD	1114	Std. Error of Mean	454.7
Coefficient of Variation	0.195	Skewness	-0.667
Mean of logged Data	8.631	SD of logged Data	0.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6614	95% Adjusted-CLT UCL (Chen-1995)	6314
		95% Modified-t UCL (Johnson-1978)	6594

Nonparametric Distribution Free UCLs

95% CLT UCL	6446	95% Jackknife UCL	6614
95% Standard Bootstrap UCL	6394	95% Bootstrap-t UCL	6529
95% Hall's Bootstrap UCL	6185	95% Percentile Bootstrap UCL	6343
95% BCA Bootstrap UCL	6303		
90% Chebyshev(Mean, Sd) UCL	7062	95% Chebyshev(Mean, Sd) UCL	7680
97.5% Chebyshev(Mean, Sd) UCL	8538	99% Chebyshev(Mean, Sd) UCL	10222

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	166	Mean	263
Maximum	338	Median	292
SD	77.69	Std. Error of Mean	31.72
Coefficient of Variation	0.295	Skewness	-0.675
Mean of logged Data	5.53	SD of logged Data	0.329

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	326.9	95% Adjusted-CLT UCL (Chen-1995)	305.8
		95% Modified-t UCL (Johnson-1978)	325.5

Nonparametric Distribution Free UCLs

95% CLT UCL	315.2	95% Jackknife UCL	326.9
95% Standard Bootstrap UCL	310.7	95% Bootstrap-t UCL	314.8
95% Hall's Bootstrap UCL	294.6	95% Percentile Bootstrap UCL	309.5
95% BCA Bootstrap UCL	301.3		
90% Chebyshev(Mean, Sd) UCL	358.2	95% Chebyshev(Mean, Sd) UCL	401.3
97.5% Chebyshev(Mean, Sd) UCL	461.1	99% Chebyshev(Mean, Sd) UCL	578.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2810	Mean	4648
Maximum	6280	Median	4715
SD	1183	Std. Error of Mean	482.9
Coefficient of Variation	0.254	Skewness	-0.32
Mean of logged Data	8.414	SD of logged Data	0.277

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5621	95% Adjusted-CLT UCL (Chen-1995)	5375
		95% Modified-t UCL (Johnson-1978)	5611

Nonparametric Distribution Free UCLs

95% CLT UCL	5443	95% Jackknife UCL	5621
95% Standard Bootstrap UCL	5380	95% Bootstrap-t UCL	5480
95% Hall's Bootstrap UCL	5482	95% Percentile Bootstrap UCL	5343
95% BCA Bootstrap UCL	5303		
90% Chebyshev(Mean, Sd) UCL	6097	95% Chebyshev(Mean, Sd) UCL	6753
97.5% Chebyshev(Mean, Sd) UCL	7664	99% Chebyshev(Mean, Sd) UCL	9453

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6520	Mean	11195
Maximum	14100	Median	11900
SD	2690	Std. Error of Mean	1098
Coefficient of Variation	0.24	Skewness	-1.141
Mean of logged Data	9.294	SD of logged Data	0.278

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13408	95% Adjusted-CLT UCL (Chen-1995)	12455
		95% Modified-t UCL (Johnson-1978)	13323

Nonparametric Distribution Free UCLs

95% CLT UCL	13001	95% Jackknife UCL	13408
95% Standard Bootstrap UCL	12817	95% Bootstrap-t UCL	12901
95% Hall's Bootstrap UCL	12536	95% Percentile Bootstrap UCL	12667
95% BCA Bootstrap UCL	12533		
90% Chebyshev(Mean, Sd) UCL	14490	95% Chebyshev(Mean, Sd) UCL	15982
97.5% Chebyshev(Mean, Sd) UCL	18054	99% Chebyshev(Mean, Sd) UCL	22122

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:31:21 PM
From File	Thompson K.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.6	Mean	13.92
Maximum	17	Median	13.35
SD	1.587	Std. Error of Mean	0.648
Coefficient of Variation	0.114	Skewness	1.962
Mean of logged Data	2.628	SD of logged Data	0.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.22	95% Adjusted-CLT UCL (Chen-1995)	15.54
		95% Modified-t UCL (Johnson-1978)	15.31

Nonparametric Distribution Free UCLs

95% CLT UCL	14.98	95% Jackknife UCL	15.22
95% Standard Bootstrap UCL	14.88	95% Bootstrap-t UCL	17.95
95% Hall's Bootstrap UCL	21.25	95% Percentile Bootstrap UCL	14.93
95% BCA Bootstrap UCL	15.32		
90% Chebyshev(Mean, Sd) UCL	15.86	95% Chebyshev(Mean, Sd) UCL	16.74
97.5% Chebyshev(Mean, Sd) UCL	17.96	99% Chebyshev(Mean, Sd) UCL	20.36

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	34	Mean	43.47
Maximum	52.3	Median	43.3
SD	6.776	Std. Error of Mean	2.766
Coefficient of Variation	0.156	Skewness	-0.108
Mean of logged Data	3.762	SD of logged Data	0.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.04	95% Adjusted-CLT UCL (Chen-1995)	47.89
		95% Modified-t UCL (Johnson-1978)	49.02

Nonparametric Distribution Free UCLs

95% CLT UCL	48.02	95% Jackknife UCL	49.04
95% Standard Bootstrap UCL	47.63	95% Bootstrap-t UCL	49.32
95% Hall's Bootstrap UCL	47.34	95% Percentile Bootstrap UCL	47.55
95% BCA Bootstrap UCL	47.62		
90% Chebyshev(Mean, Sd) UCL	51.77	95% Chebyshev(Mean, Sd) UCL	55.52
97.5% Chebyshev(Mean, Sd) UCL	60.74	99% Chebyshev(Mean, Sd) UCL	70.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48.3	Mean	52.1
Maximum	58.2	Median	51.25
SD	3.496	Std. Error of Mean	1.427
Coefficient of Variation	0.0671	Skewness	1.143
Mean of logged Data	3.951	SD of logged Data	0.0656

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.98	95% Adjusted-CLT UCL (Chen-1995)	55.16
		95% Modified-t UCL (Johnson-1978)	55.09

Nonparametric Distribution Free UCLs

95% CLT UCL	54.45	95% Jackknife UCL	54.98
95% Standard Bootstrap UCL	54.27	95% Bootstrap-t UCL	56.55
95% Hall's Bootstrap UCL	69.31	95% Percentile Bootstrap UCL	54.5
95% BCA Bootstrap UCL	54.82		
90% Chebyshev(Mean, Sd) UCL	56.38	95% Chebyshev(Mean, Sd) UCL	58.32
97.5% Chebyshev(Mean, Sd) UCL	61.01	99% Chebyshev(Mean, Sd) UCL	66.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	70.3	Mean	122.6
Maximum	236	Median	88.15
SD	66.3	Std. Error of Mean	27.07
Coefficient of Variation	0.541	Skewness	1.316
Mean of logged Data	4.703	SD of logged Data	0.483

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	177.1	95% Adjusted-CLT UCL (Chen-1995)	182.7
		95% Modified-t UCL (Johnson-1978)	179.6

Nonparametric Distribution Free UCLs

95% CLT UCL	167.1	95% Jackknife UCL	177.1
95% Standard Bootstrap UCL	162.7	95% Bootstrap-t UCL	462.6
95% Hall's Bootstrap UCL	620.4	95% Percentile Bootstrap UCL	164.5
95% BCA Bootstrap UCL	175		
90% Chebyshev(Mean, Sd) UCL	203.8	95% Chebyshev(Mean, Sd) UCL	240.6
97.5% Chebyshev(Mean, Sd) UCL	291.6	99% Chebyshev(Mean, Sd) UCL	391.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	266	Mean	427.2
Maximum	804	Median	291.5
SD	235.1	Std. Error of Mean	95.97
Coefficient of Variation	0.55	Skewness	1.16
Mean of logged Data	5.946	SD of logged Data	0.495

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	620.5	95% Adjusted-CLT UCL (Chen-1995)	633.6
		95% Modified-t UCL (Johnson-1978)	628.1

Nonparametric Distribution Free UCLs

95% CLT UCL	585	95% Jackknife UCL	620.5
95% Standard Bootstrap UCL	571.1	95% Bootstrap-t UCL	3097
95% Hall's Bootstrap UCL	2707	95% Percentile Bootstrap UCL	579.2
95% BCA Bootstrap UCL	601.7		
90% Chebyshev(Mean, Sd) UCL	715.1	95% Chebyshev(Mean, Sd) UCL	845.5
97.5% Chebyshev(Mean, Sd) UCL	1026	99% Chebyshev(Mean, Sd) UCL	1382

Suggested UCL to Use

95% Student's-t UCL	620.5	or 95% Modified-t UCL	628.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	755	Mean	1432
Maximum	2300	Median	1243
SD	670.5	Std. Error of Mean	273.7
Coefficient of Variation	0.468	Skewness	0.456
Mean of logged Data	7.173	SD of logged Data	0.476

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1983	95% Adjusted-CLT UCL (Chen-1995)	1936
		95% Modified-t UCL (Johnson-1978)	1992

Nonparametric Distribution Free UCLs

95% CLT UCL	1882	95% Jackknife UCL	1983
95% Standard Bootstrap UCL	1841	95% Bootstrap-t UCL	2499
95% Hall's Bootstrap UCL	1952	95% Percentile Bootstrap UCL	1863
95% BCA Bootstrap UCL	1863		
90% Chebyshev(Mean, Sd) UCL	2253	95% Chebyshev(Mean, Sd) UCL	2625
97.5% Chebyshev(Mean, Sd) UCL	3141	99% Chebyshev(Mean, Sd) UCL	4155

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5700	Mean	9972
Maximum	15000	Median	9080
SD	3720	Std. Error of Mean	1519
Coefficient of Variation	0.373	Skewness	0.486
Mean of logged Data	9.149	SD of logged Data	0.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13032	95% Adjusted-CLT UCL (Chen-1995)	12792
		95% Modified-t UCL (Johnson-1978)	13082

Nonparametric Distribution Free UCLs

95% CLT UCL	12470	95% Jackknife UCL	13032
95% Standard Bootstrap UCL	12304	95% Bootstrap-t UCL	15036
95% Hall's Bootstrap UCL	18070	95% Percentile Bootstrap UCL	12382
95% BCA Bootstrap UCL	12452		
90% Chebyshev(Mean, Sd) UCL	14528	95% Chebyshev(Mean, Sd) UCL	16592
97.5% Chebyshev(Mean, Sd) UCL	19457	99% Chebyshev(Mean, Sd) UCL	25084

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6870	Mean	11282
Maximum	17300	Median	9955
SD	4208	Std. Error of Mean	1718
Coefficient of Variation	0.373	Skewness	0.696
Mean of logged Data	9.275	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14744	95% Adjusted-CLT UCL (Chen-1995)	14629
		95% Modified-t UCL (Johnson-1978)	14825

Nonparametric Distribution Free UCLs

95% CLT UCL	14108	95% Jackknife UCL	14744
95% Standard Bootstrap UCL	13905	95% Bootstrap-t UCL	18589
95% Hall's Bootstrap UCL	43808	95% Percentile Bootstrap UCL	13958
95% BCA Bootstrap UCL	14052		
90% Chebyshev(Mean, Sd) UCL	16436	95% Chebyshev(Mean, Sd) UCL	18771
97.5% Chebyshev(Mean, Sd) UCL	22011	99% Chebyshev(Mean, Sd) UCL	28376

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8690	Mean	14448
Maximum	21600	Median	13100
SD	5087	Std. Error of Mean	2077
Coefficient of Variation	0.352	Skewness	0.568
Mean of logged Data	9.527	SD of logged Data	0.35

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18633	95% Adjusted-CLT UCL (Chen-1995)	18379
		95% Modified-t UCL (Johnson-1978)	18713

Nonparametric Distribution Free UCLs

95% CLT UCL	17864	95% Jackknife UCL	18633
95% Standard Bootstrap UCL	17559	95% Bootstrap-t UCL	22507
95% Hall's Bootstrap UCL	49792	95% Percentile Bootstrap UCL	17717
95% BCA Bootstrap UCL	17767		
90% Chebyshev(Mean, Sd) UCL	20678	95% Chebyshev(Mean, Sd) UCL	23500
97.5% Chebyshev(Mean, Sd) UCL	27417	99% Chebyshev(Mean, Sd) UCL	35110

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4140	Mean	6615
Maximum	9810	Median	5910
SD	2272	Std. Error of Mean	927.5
Coefficient of Variation	0.343	Skewness	0.649
Mean of logged Data	8.749	SD of logged Data	0.337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8484	95% Adjusted-CLT UCL (Chen-1995)	8403
		95% Modified-t UCL (Johnson-1978)	8525

Nonparametric Distribution Free UCLs

95% CLT UCL	8141	95% Jackknife UCL	8484
95% Standard Bootstrap UCL	7941	95% Bootstrap-t UCL	10719
95% Hall's Bootstrap UCL	24704	95% Percentile Bootstrap UCL	8183
95% BCA Bootstrap UCL	8107		
90% Chebyshev(Mean, Sd) UCL	9398	95% Chebyshev(Mean, Sd) UCL	10658
97.5% Chebyshev(Mean, Sd) UCL	12407	99% Chebyshev(Mean, Sd) UCL	15844

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3560	Mean	5923
Maximum	8920	Median	5360
SD	2134	Std. Error of Mean	871.2
Coefficient of Variation	0.36	Skewness	0.583
Mean of logged Data	8.633	SD of logged Data	0.358

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7679	95% Adjusted-CLT UCL (Chen-1995)	7578

95% Modified-t UCL (Johnson-1978)	7713

Nonparametric Distribution Free UCLs

95% CLT UCL	7356	95% Jackknife UCL	7679
95% Standard Bootstrap UCL	7224	95% Bootstrap-t UCL	9278
95% Hall's Bootstrap UCL	21665	95% Percentile Bootstrap UCL	7295
95% BCA Bootstrap UCL	7323		
90% Chebyshev(Mean, Sd) UCL	8537	95% Chebyshev(Mean, Sd) UCL	9721
97.5% Chebyshev(Mean, Sd) UCL	11364	99% Chebyshev(Mean, Sd) UCL	14592

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6780	Mean	11137
Maximum	16800	Median	9985
SD	4029	Std. Error of Mean	1645
Coefficient of Variation	0.362	Skewness	0.624
Mean of logged Data	9.265	SD of logged Data	0.357

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14451	95% Adjusted-CLT UCL (Chen-1995)	14290
		95% Modified-t UCL (Johnson-1978)	14521

Nonparametric Distribution Free UCLs

95% CLT UCL	13842	95% Jackknife UCL	14451
95% Standard Bootstrap UCL	13603	95% Bootstrap-t UCL	18214
95% Hall's Bootstrap UCL	38863	95% Percentile Bootstrap UCL	13778
95% BCA Bootstrap UCL	13780		
90% Chebyshev(Mean, Sd) UCL	16071	95% Chebyshev(Mean, Sd) UCL	18306
97.5% Chebyshev(Mean, Sd) UCL	21408	99% Chebyshev(Mean, Sd) UCL	27502

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1190	Mean	1932
Maximum	2920	Median	1725
SD	693.9	Std. Error of Mean	283.3
Coefficient of Variation	0.359	Skewness	0.661
Mean of logged Data	7.514	SD of logged Data	0.352

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2502	95% Adjusted-CLT UCL (Chen-1995)	2479
		95% Modified-t UCL (Johnson-1978)	2515

Nonparametric Distribution Free UCLs

95% CLT UCL	2398	95% Jackknife UCL	2502
95% Standard Bootstrap UCL	2365	95% Bootstrap-t UCL	3173
95% Hall's Bootstrap UCL	7158	95% Percentile Bootstrap UCL	2382
95% BCA Bootstrap UCL	2427		
90% Chebyshev(Mean, Sd) UCL	2782	95% Chebyshev(Mean, Sd) UCL	3166
97.5% Chebyshev(Mean, Sd) UCL	3701	99% Chebyshev(Mean, Sd) UCL	4750

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9690	Mean	16915
Maximum	24500	Median	15600
SD	5769	Std. Error of Mean	2355
Coefficient of Variation	0.341	Skewness	0.341
Mean of logged Data	9.686	SD of logged Data	0.35

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21661	95% Adjusted-CLT UCL (Chen-1995)	21139
		95% Modified-t UCL (Johnson-1978)	21715

Nonparametric Distribution Free UCLs

95% CLT UCL	20789	95% Jackknife UCL	21661

95% Standard Bootstrap UCL	20395	95% Bootstrap-t UCL	24474
95% Hall's Bootstrap UCL	26256	95% Percentile Bootstrap UCL	20467
95% BCA Bootstrap UCL	20717		
90% Chebyshev(Mean, Sd) UCL	23980	95% Chebyshev(Mean, Sd) UCL	27181
97.5% Chebyshev(Mean, Sd) UCL	31623	99% Chebyshev(Mean, Sd) UCL	40348

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	91	Mean	184.3
Maximum	347	Median	122
SD	113.3	Std. Error of Mean	46.26
Coefficient of Variation	0.615	Skewness	0.959
Mean of logged Data	5.072	SD of logged Data	0.572

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	277.6	95% Adjusted-CLT UCL (Chen-1995)	279.8
		95% Modified-t UCL (Johnson-1978)	280.6

Nonparametric Distribution Free UCLs

95% CLT UCL	260.4	95% Jackknife UCL	277.6
95% Standard Bootstrap UCL	254.7	95% Bootstrap-t UCL	750.9
95% Hall's Bootstrap UCL	1128	95% Percentile Bootstrap UCL	259.5
95% BCA Bootstrap UCL	263.2		
90% Chebyshev(Mean, Sd) UCL	323.1	95% Chebyshev(Mean, Sd) UCL	386
97.5% Chebyshev(Mean, Sd) UCL	473.2	99% Chebyshev(Mean, Sd) UCL	644.6

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4740	Mean	7615
Maximum	11400	Median	6785

SD	2643	Std. Error of Mean	1079
Coefficient of Variation	0.347	Skewness	0.673
Mean of logged Data	8.889	SD of logged Data	0.34

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9789	95% Adjusted-CLT UCL (Chen-1995)	9707
		95% Modified-t UCL (Johnson-1978)	9839

Nonparametric Distribution Free UCLs

95% CLT UCL	9390	95% Jackknife UCL	9789
95% Standard Bootstrap UCL	9261	95% Bootstrap-t UCL	12561
95% Hall's Bootstrap UCL	28569	95% Percentile Bootstrap UCL	9305
95% BCA Bootstrap UCL	9495		
90% Chebyshev(Mean, Sd) UCL	10852	95% Chebyshev(Mean, Sd) UCL	12318
97.5% Chebyshev(Mean, Sd) UCL	14353	99% Chebyshev(Mean, Sd) UCL	18351

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	183	Mean	347.3
Maximum	700	Median	249.5
SD	204.5	Std. Error of Mean	83.5
Coefficient of Variation	0.589	Skewness	1.331
Mean of logged Data	5.725	SD of logged Data	0.527

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	515.6	95% Adjusted-CLT UCL (Chen-1995)	533.2
		95% Modified-t UCL (Johnson-1978)	523.2

Nonparametric Distribution Free UCLs

95% CLT UCL	484.7	95% Jackknife UCL	515.6
95% Standard Bootstrap UCL	473.9	95% Bootstrap-t UCL	1182
95% Hall's Bootstrap UCL	1682	95% Percentile Bootstrap UCL	479.7
95% BCA Bootstrap UCL	508.5		
90% Chebyshev(Mean, Sd) UCL	597.8	95% Chebyshev(Mean, Sd) UCL	711.3

97.5% Chebyshev(Mean, Sd) UCL	868.8	99% Chebyshev(Mean, Sd) UCL	1178

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3800	Mean	6790
Maximum	9590	Median	6425
SD	2356	Std. Error of Mean	961.8
Coefficient of Variation	0.347	Skewness	0.135
Mean of logged Data	8.77	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8728	95% Adjusted-CLT UCL (Chen-1995)	8429
		95% Modified-t UCL (Johnson-1978)	8737

Nonparametric Distribution Free UCLs

95% CLT UCL	8372	95% Jackknife UCL	8728
95% Standard Bootstrap UCL	8259	95% Bootstrap-t UCL	9524
95% Hall's Bootstrap UCL	8691	95% Percentile Bootstrap UCL	8170
95% BCA Bootstrap UCL	8385		
90% Chebyshev(Mean, Sd) UCL	9675	95% Chebyshev(Mean, Sd) UCL	10982
97.5% Chebyshev(Mean, Sd) UCL	12796	99% Chebyshev(Mean, Sd) UCL	16360

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9650	Mean	16125
Maximum	24200	Median	14350
SD	5835	Std. Error of Mean	2382
Coefficient of Variation	0.362	Skewness	0.603
Mean of logged Data	9.634	SD of logged Data	0.358

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20925	95% Adjusted-CLT UCL (Chen-1995)	20670
		95% Modified-t UCL (Johnson-1978)	21023

Nonparametric Distribution Free UCLs

95% CLT UCL	20044	95% Jackknife UCL	20925
95% Standard Bootstrap UCL	19715	95% Bootstrap-t UCL	25250
95% Hall's Bootstrap UCL	59659	95% Percentile Bootstrap UCL	19925
95% BCA Bootstrap UCL	19767		
90% Chebyshev(Mean, Sd) UCL	23272	95% Chebyshev(Mean, Sd) UCL	26509
97.5% Chebyshev(Mean, Sd) UCL	31002	99% Chebyshev(Mean, Sd) UCL	39828

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:32:22 PM
From File	Thompson L.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.7	Mean	13.8
Maximum	14.3	Median	14.05
SD	0.632	Std. Error of Mean	0.258
Coefficient of Variation	0.0458	Skewness	-1.316
Mean of logged Data	2.624	SD of logged Data	0.0468

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.32	95% Adjusted-CLT UCL (Chen-1995)	14.08
		95% Modified-t UCL (Johnson-1978)	14.3

Nonparametric Distribution Free UCLs

95% CLT UCL	14.22	95% Jackknife UCL	14.32
95% Standard Bootstrap UCL	14.2	95% Bootstrap-t UCL	14.17
95% Hall's Bootstrap UCL	14.08	95% Percentile Bootstrap UCL	14.17
95% BCA Bootstrap UCL	14.08		
90% Chebyshev(Mean, Sd) UCL	14.57	95% Chebyshev(Mean, Sd) UCL	14.93
97.5% Chebyshev(Mean, Sd) UCL	15.41	99% Chebyshev(Mean, Sd) UCL	16.37

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	30.5	Mean	74.28
Maximum	138	Median	66.6
SD	36.82	Std. Error of Mean	15.03
Coefficient of Variation	0.496	Skewness	1.016

Mean of logged Data	4.205	SD of logged Data	0.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	104.6	95% Adjusted-CLT UCL (Chen-1995)	105.7
		95% Modified-t UCL (Johnson-1978)	105.6

Nonparametric Distribution Free UCLs

95% CLT UCL	99.01	95% Jackknife UCL	104.6
95% Standard Bootstrap UCL	96.72	95% Bootstrap-t UCL	123.6
95% Hall's Bootstrap UCL	290.9	95% Percentile Bootstrap UCL	98.08
95% BCA Bootstrap UCL	102.5		
90% Chebyshev(Mean, Sd) UCL	119.4	95% Chebyshev(Mean, Sd) UCL	139.8
97.5% Chebyshev(Mean, Sd) UCL	168.2	99% Chebyshev(Mean, Sd) UCL	223.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.4	Mean	55.12
Maximum	62.3	Median	54.05
SD	4.093	Std. Error of Mean	1.671
Coefficient of Variation	0.0743	Skewness	1.251
Mean of logged Data	4.007	SD of logged Data	0.0723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.48	95% Adjusted-CLT UCL (Chen-1995)	58.78
		95% Modified-t UCL (Johnson-1978)	58.63

Nonparametric Distribution Free UCLs

95% CLT UCL	57.86	95% Jackknife UCL	58.48
95% Standard Bootstrap UCL	57.58	95% Bootstrap-t UCL	61.85
95% Hall's Bootstrap UCL	75.07	95% Percentile Bootstrap UCL	57.78
95% BCA Bootstrap UCL	58.28		
90% Chebyshev(Mean, Sd) UCL	60.13	95% Chebyshev(Mean, Sd) UCL	62.4
97.5% Chebyshev(Mean, Sd) UCL	65.55	99% Chebyshev(Mean, Sd) UCL	71.74

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	194	Mean	331.2
Maximum	494	Median	316
SD	124.1	Std. Error of Mean	50.67
Coefficient of Variation	0.375	Skewness	0.225
Mean of logged Data	5.742	SD of logged Data	0.386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	433.3	95% Adjusted-CLT UCL (Chen-1995)	419.5
		95% Modified-t UCL (Johnson-1978)	434

Nonparametric Distribution Free UCLs

95% CLT UCL	414.5	95% Jackknife UCL	433.3
95% Standard Bootstrap UCL	408.2	95% Bootstrap-t UCL	434.2
95% Hall's Bootstrap UCL	389.2	95% Percentile Bootstrap UCL	407.2
95% BCA Bootstrap UCL	412.5		
90% Chebyshev(Mean, Sd) UCL	483.2	95% Chebyshev(Mean, Sd) UCL	552
97.5% Chebyshev(Mean, Sd) UCL	647.6	99% Chebyshev(Mean, Sd) UCL	835.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	706	Mean	1105
Maximum	1750	Median	972.5
SD	375.5	Std. Error of Mean	153.3
Coefficient of Variation	0.34	Skewness	1.146
Mean of logged Data	6.963	SD of logged Data	0.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1414	95% Adjusted-CLT UCL (Chen-1995)	1434
		95% Modified-t UCL (Johnson-1978)	1426

Nonparametric Distribution Free UCLs

95% CLT UCL	1357	95% Jackknife UCL	1414
95% Standard Bootstrap UCL	1333	95% Bootstrap-t UCL	1866
95% Hall's Bootstrap UCL	3395	95% Percentile Bootstrap UCL	1351
95% BCA Bootstrap UCL	1400		
90% Chebyshev(Mean, Sd) UCL	1565	95% Chebyshev(Mean, Sd) UCL	1773
97.5% Chebyshev(Mean, Sd) UCL	2062	99% Chebyshev(Mean, Sd) UCL	2630

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2010	Mean	3810
Maximum	5980	Median	3835
SD	1493	Std. Error of Mean	609.6
Coefficient of Variation	0.392	Skewness	0.264
Mean of logged Data	8.177	SD of logged Data	0.413

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5038	95% Adjusted-CLT UCL (Chen-1995)	4883
		95% Modified-t UCL (Johnson-1978)	5049

Nonparametric Distribution Free UCLs

95% CLT UCL	4813	95% Jackknife UCL	5038
95% Standard Bootstrap UCL	4726	95% Bootstrap-t UCL	5248
95% Hall's Bootstrap UCL	4713	95% Percentile Bootstrap UCL	4728
95% BCA Bootstrap UCL	4728		
90% Chebyshev(Mean, Sd) UCL	5639	95% Chebyshev(Mean, Sd) UCL	6467
97.5% Chebyshev(Mean, Sd) UCL	7617	99% Chebyshev(Mean, Sd) UCL	9875

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11100	Mean	21417
Maximum	31400	Median	21700
SD	6918	Std. Error of Mean	2824
Coefficient of Variation	0.323	Skewness	-0.0902
Mean of logged Data	9.923	SD of logged Data	0.357

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27107	95% Adjusted-CLT UCL (Chen-1995)	25951
		95% Modified-t UCL (Johnson-1978)	27090

Nonparametric Distribution Free UCLs

95% CLT UCL	26062	95% Jackknife UCL	27107
95% Standard Bootstrap UCL	25695	95% Bootstrap-t UCL	26999
95% Hall's Bootstrap UCL	26780	95% Percentile Bootstrap UCL	25717
95% BCA Bootstrap UCL	25667		
90% Chebyshev(Mean, Sd) UCL	29889	95% Chebyshev(Mean, Sd) UCL	33727
97.5% Chebyshev(Mean, Sd) UCL	39053	99% Chebyshev(Mean, Sd) UCL	49516

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12500	Mean	23300
Maximum	33600	Median	23650
SD	7215	Std. Error of Mean	2946
Coefficient of Variation	0.31	Skewness	-0.133
Mean of logged Data	10.01	SD of logged Data	0.341

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29235	95% Adjusted-CLT UCL (Chen-1995)	27974
		95% Modified-t UCL (Johnson-1978)	29209

Nonparametric Distribution Free UCLs

95% CLT UCL	28145	95% Jackknife UCL	29235
95% Standard Bootstrap UCL	27680	95% Bootstrap-t UCL	29127
95% Hall's Bootstrap UCL	28549	95% Percentile Bootstrap UCL	27767
95% BCA Bootstrap UCL	27500		
90% Chebyshev(Mean, Sd) UCL	32137	95% Chebyshev(Mean, Sd) UCL	36139
97.5% Chebyshev(Mean, Sd) UCL	41695	99% Chebyshev(Mean, Sd) UCL	52607

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15900	Mean	29650
Maximum	43200	Median	29800
SD	9226	Std. Error of Mean	3767
Coefficient of Variation	0.311	Skewness	-0.0433
Mean of logged Data	10.25	SD of logged Data	0.34

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37240	95% Adjusted-CLT UCL (Chen-1995)	35774
		95% Modified-t UCL (Johnson-1978)	37229

Nonparametric Distribution Free UCLs

95% CLT UCL	35845	95% Jackknife UCL	37240
95% Standard Bootstrap UCL	35235	95% Bootstrap-t UCL	37490
95% Hall's Bootstrap UCL	36636	95% Percentile Bootstrap UCL	35000
95% BCA Bootstrap UCL	35317		
90% Chebyshev(Mean, Sd) UCL	40950	95% Chebyshev(Mean, Sd) UCL	46068
97.5% Chebyshev(Mean, Sd) UCL	53172	99% Chebyshev(Mean, Sd) UCL	67127

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7760	Mean	13927
Maximum	19300	Median	14300
SD	3983	Std. Error of Mean	1626
Coefficient of Variation	0.286	Skewness	-0.362
Mean of logged Data	9.503	SD of logged Data	0.317

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17203	95% Adjusted-CLT UCL (Chen-1995)	16344
		95% Modified-t UCL (Johnson-1978)	17163

Nonparametric Distribution Free UCLs

95% CLT UCL	16601	95% Jackknife UCL	17203
95% Standard Bootstrap UCL	16431	95% Bootstrap-t UCL	16991
95% Hall's Bootstrap UCL	16470	95% Percentile Bootstrap UCL	16367
95% BCA Bootstrap UCL	16193		
90% Chebyshev(Mean, Sd) UCL	18804	95% Chebyshev(Mean, Sd) UCL	21014
97.5% Chebyshev(Mean, Sd) UCL	24080	99% Chebyshev(Mean, Sd) UCL	30104

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5690	Mean	10728
Maximum	15000	Median	11100
SD	3277	Std. Error of Mean	1338
Coefficient of Variation	0.305	Skewness	-0.395

Mean of logged Data	9.235	SD of logged Data	0.343

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13424	95% Adjusted-CLT UCL (Chen-1995)	12698
		95% Modified-t UCL (Johnson-1978)	13388

Nonparametric Distribution Free UCLs

95% CLT UCL	12929	95% Jackknife UCL	13424
95% Standard Bootstrap UCL	12765	95% Bootstrap-t UCL	13245
95% Hall's Bootstrap UCL	12879	95% Percentile Bootstrap UCL	12730
95% BCA Bootstrap UCL	12630		
90% Chebyshev(Mean, Sd) UCL	14742	95% Chebyshev(Mean, Sd) UCL	16561
97.5% Chebyshev(Mean, Sd) UCL	19084	99% Chebyshev(Mean, Sd) UCL	24041

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14100	Mean	26500
Maximum	38300	Median	26800
SD	8243	Std. Error of Mean	3365
Coefficient of Variation	0.311	Skewness	-0.134
Mean of logged Data	10.14	SD of logged Data	0.343

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33281	95% Adjusted-CLT UCL (Chen-1995)	31839
		95% Modified-t UCL (Johnson-1978)	33251

Nonparametric Distribution Free UCLs

95% CLT UCL	32035	95% Jackknife UCL	33281
95% Standard Bootstrap UCL	31478	95% Bootstrap-t UCL	32902
95% Hall's Bootstrap UCL	32640	95% Percentile Bootstrap UCL	31600
95% BCA Bootstrap UCL	31500		

90% Chebyshev(Mean, Sd) UCL	36596	95% Chebyshev(Mean, Sd) UCL	41169
97.5% Chebyshev(Mean, Sd) UCL	47516	99% Chebyshev(Mean, Sd) UCL	59984

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2410	Mean	3942
Maximum	5690	Median	3950
SD	1180	Std. Error of Mean	481.9
Coefficient of Variation	0.299	Skewness	0.244
Mean of logged Data	8.24	SD of logged Data	0.31

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4913	95% Adjusted-CLT UCL (Chen-1995)	4786
		95% Modified-t UCL (Johnson-1978)	4921

Nonparametric Distribution Free UCLs

95% CLT UCL	4734	95% Jackknife UCL	4913
95% Standard Bootstrap UCL	4677	95% Bootstrap-t UCL	4997
95% Hall's Bootstrap UCL	4743	95% Percentile Bootstrap UCL	4703
95% BCA Bootstrap UCL	4667		
90% Chebyshev(Mean, Sd) UCL	5387	95% Chebyshev(Mean, Sd) UCL	6042
97.5% Chebyshev(Mean, Sd) UCL	6951	99% Chebyshev(Mean, Sd) UCL	8737

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20500	Mean	39550
Maximum	59700	Median	38650

SD	13543	Std. Error of Mean	5529
Coefficient of Variation	0.342	Skewness	0.148
Mean of logged Data	10.53	SD of logged Data	0.369

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50691	95% Adjusted-CLT UCL (Chen-1995)	49002
		95% Modified-t UCL (Johnson-1978)	50747

Nonparametric Distribution Free UCLs

95% CLT UCL	48644	95% Jackknife UCL	50691
95% Standard Bootstrap UCL	47613	95% Bootstrap-t UCL	52734
95% Hall's Bootstrap UCL	51655	95% Percentile Bootstrap UCL	48233
95% BCA Bootstrap UCL	48233		
90% Chebyshev(Mean, Sd) UCL	56136	95% Chebyshev(Mean, Sd) UCL	63649
97.5% Chebyshev(Mean, Sd) UCL	74077	99% Chebyshev(Mean, Sd) UCL	94560

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	344	Mean	544.7
Maximum	855	Median	498.5
SD	195.4	Std. Error of Mean	79.79
Coefficient of Variation	0.359	Skewness	0.775
Mean of logged Data	6.248	SD of logged Data	0.349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	705.4	95% Adjusted-CLT UCL (Chen-1995)	702.9
		95% Modified-t UCL (Johnson-1978)	709.7

Nonparametric Distribution Free UCLs

95% CLT UCL	675.9	95% Jackknife UCL	705.4
95% Standard Bootstrap UCL	663.5	95% Bootstrap-t UCL	750.3
95% Hall's Bootstrap UCL	737.6	95% Percentile Bootstrap UCL	671.2
95% BCA Bootstrap UCL	671.7		
90% Chebyshev(Mean, Sd) UCL	784	95% Chebyshev(Mean, Sd) UCL	892.5

97.5% Chebyshev(Mean, Sd) UCL	1043	99% Chebyshev(Mean, Sd) UCL	1339

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	8570	Mean	15828
Maximum	21500	Median	16900
SD	4543	Std. Error of Mean	1855
Coefficient of Variation	0.287	Skewness	-0.637
Mean of logged Data	9.629	SD of logged Data	0.327

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19565	95% Adjusted-CLT UCL (Chen-1995)	18363
		95% Modified-t UCL (Johnson-1978)	19485

Nonparametric Distribution Free UCLs

95% CLT UCL	18879	95% Jackknife UCL	19565
95% Standard Bootstrap UCL	18627	95% Bootstrap-t UCL	19051
95% Hall's Bootstrap UCL	18379	95% Percentile Bootstrap UCL	18550
95% BCA Bootstrap UCL	18383		
90% Chebyshev(Mean, Sd) UCL	21392	95% Chebyshev(Mean, Sd) UCL	23912
97.5% Chebyshev(Mean, Sd) UCL	27410	99% Chebyshev(Mean, Sd) UCL	34282

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	597	Mean	958.7
Maximum	1750	Median	802
SD	430.9	Std. Error of Mean	175.9

Coefficient of Variation	0.449	Skewness	1.574
Mean of logged Data	6.794	SD of logged Data	0.397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1313	95% Adjusted-CLT UCL (Chen-1995)	1369
		95% Modified-t UCL (Johnson-1978)	1332

Nonparametric Distribution Free UCLs

95% CLT UCL	1248	95% Jackknife UCL	1313
95% Standard Bootstrap UCL	1227	95% Bootstrap-t UCL	2068
95% Hall's Bootstrap UCL	3024	95% Percentile Bootstrap UCL	1237
95% BCA Bootstrap UCL	1332		
90% Chebyshev(Mean, Sd) UCL	1486	95% Chebyshev(Mean, Sd) UCL	1725
97.5% Chebyshev(Mean, Sd) UCL	2057	99% Chebyshev(Mean, Sd) UCL	2709

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9360	Mean	18843
Maximum	29000	Median	18700
SD	6786	Std. Error of Mean	2770
Coefficient of Variation	0.36	Skewness	0.169
Mean of logged Data	9.784	SD of logged Data	0.391

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24426	95% Adjusted-CLT UCL (Chen-1995)	23604
		95% Modified-t UCL (Johnson-1978)	24457

Nonparametric Distribution Free UCLs

95% CLT UCL	23400	95% Jackknife UCL	24426
95% Standard Bootstrap UCL	22993	95% Bootstrap-t UCL	24773
95% Hall's Bootstrap UCL	24481	95% Percentile Bootstrap UCL	23133
95% BCA Bootstrap UCL	23233		
90% Chebyshev(Mean, Sd) UCL	27154	95% Chebyshev(Mean, Sd) UCL	30919
97.5% Chebyshev(Mean, Sd) UCL	36144	99% Chebyshev(Mean, Sd) UCL	46407

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19900	Mean	37950
Maximum	56900	Median	37550
SD	12657	Std. Error of Mean	5167
Coefficient of Variation	0.334	Skewness	0.129
Mean of logged Data	10.49	SD of logged Data	0.36

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48362	95% Adjusted-CLT UCL (Chen-1995)	46740
		95% Modified-t UCL (Johnson-1978)	48407

Nonparametric Distribution Free UCLs

95% CLT UCL	46449	95% Jackknife UCL	48362
95% Standard Bootstrap UCL	46100	95% Bootstrap-t UCL	49340
95% Hall's Bootstrap UCL	47735	95% Percentile Bootstrap UCL	45833
95% BCA Bootstrap UCL	45800		
90% Chebyshev(Mean, Sd) UCL	53451	95% Chebyshev(Mean, Sd) UCL	60472
97.5% Chebyshev(Mean, Sd) UCL	70218	99% Chebyshev(Mean, Sd) UCL	89361

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:33:37 PM
From File	Thompson M.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	11	Mean	12.73
Maximum	14.8	Median	12.7
SD	1.84	Std. Error of Mean	0.751
Coefficient of Variation	0.145	Skewness	0.0537
Mean of logged Data	2.535	SD of logged Data	0.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.25	95% Adjusted-CLT UCL (Chen-1995)	13.99
		95% Modified-t UCL (Johnson-1978)	14.25

Nonparametric Distribution Free UCLs

95% CLT UCL	13.97	95% Jackknife UCL	14.25
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14.99	95% Chebyshev(Mean, Sd) UCL	16.01
97.5% Chebyshev(Mean, Sd) UCL	17.43	99% Chebyshev(Mean, Sd) UCL	20.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	22.7	Mean	75.83
Maximum	177	Median	64.75
SD	60.14	Std. Error of Mean	24.55
Coefficient of Variation	0.793	Skewness	0.989
Mean of logged Data	4.047	SD of logged Data	0.836

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	125.3	95% Adjusted-CLT UCL (Chen-1995)	126.8
		95% Modified-t UCL (Johnson-1978)	127

Nonparametric Distribution Free UCLs

95% CLT UCL	116.2	95% Jackknife UCL	125.3
95% Standard Bootstrap UCL	112.3	95% Bootstrap-t UCL	152.2
95% Hall's Bootstrap UCL	118.9	95% Percentile Bootstrap UCL	113.2
95% BCA Bootstrap UCL	123.7		
90% Chebyshev(Mean, Sd) UCL	149.5	95% Chebyshev(Mean, Sd) UCL	182.9
97.5% Chebyshev(Mean, Sd) UCL	229.2	99% Chebyshev(Mean, Sd) UCL	320.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.8	Mean	48.02
Maximum	52.3	Median	47.95
SD	3.898	Std. Error of Mean	1.592
Coefficient of Variation	0.0812	Skewness	0.012
Mean of logged Data	3.869	SD of logged Data	0.0813

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.22	95% Adjusted-CLT UCL (Chen-1995)	50.64
		95% Modified-t UCL (Johnson-1978)	51.22

Nonparametric Distribution Free UCLs

95% CLT UCL	50.63	95% Jackknife UCL	51.22
95% Standard Bootstrap UCL	50.43	95% Bootstrap-t UCL	51.44
95% Hall's Bootstrap UCL	49.42	95% Percentile Bootstrap UCL	50.47
95% BCA Bootstrap UCL	50.4		
90% Chebyshev(Mean, Sd) UCL	52.79	95% Chebyshev(Mean, Sd) UCL	54.95
97.5% Chebyshev(Mean, Sd) UCL	57.96	99% Chebyshev(Mean, Sd) UCL	63.85

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.22	Mean	92.94
Maximum	127	Median	107.6
SD	45.13	Std. Error of Mean	18.42
Coefficient of Variation	0.486	Skewness	-2.064
Mean of logged Data	4.157	SD of logged Data	1.336

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	130.1	95% Adjusted-CLT UCL (Chen-1995)	106.7
		95% Modified-t UCL (Johnson-1978)	127.5

Nonparametric Distribution Free UCLs

95% CLT UCL	123.2	95% Jackknife UCL	130.1
95% Standard Bootstrap UCL	119.8	95% Bootstrap-t UCL	117.8
95% Hall's Bootstrap UCL	110.1	95% Percentile Bootstrap UCL	116.2
95% BCA Bootstrap UCL	112.2		
90% Chebyshev(Mean, Sd) UCL	148.2	95% Chebyshev(Mean, Sd) UCL	173.2
97.5% Chebyshev(Mean, Sd) UCL	208	99% Chebyshev(Mean, Sd) UCL	276.2

Suggested UCL to Use

95% Hall's Bootstrap UCL	110.1

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.15	Mean	305.2
Maximum	478	Median	331.5
SD	170.6	Std. Error of Mean	69.64
Coefficient of Variation	0.559	Skewness	-1.212
Mean of logged Data	5.086	SD of logged Data	1.944

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	445.5	95% Adjusted-CLT UCL (Chen-1995)	382.9
		95% Modified-t UCL (Johnson-1978)	439.8

Nonparametric Distribution Free UCLs

95% CLT UCL	419.7	95% Jackknife UCL	445.5
95% Standard Bootstrap UCL	409.1	95% Bootstrap-t UCL	418.9
95% Hall's Bootstrap UCL	392	95% Percentile Bootstrap UCL	402.3
95% BCA Bootstrap UCL	390.2		
90% Chebyshev(Mean, Sd) UCL	514.1	95% Chebyshev(Mean, Sd) UCL	608.7
97.5% Chebyshev(Mean, Sd) UCL	740.1	99% Chebyshev(Mean, Sd) UCL	998.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.68	Mean	1148
Maximum	2080	Median	1170
SD	714.2	Std. Error of Mean	291.6
Coefficient of Variation	0.622	Skewness	-0.474
Mean of logged Data	6.356	SD of logged Data	2.029

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1736	95% Adjusted-CLT UCL (Chen-1995)	1568
		95% Modified-t UCL (Johnson-1978)	1726

Nonparametric Distribution Free UCLs

95% CLT UCL	1628	95% Jackknife UCL	1736
95% Standard Bootstrap UCL	1582	95% Bootstrap-t UCL	1653
95% Hall's Bootstrap UCL	1687	95% Percentile Bootstrap UCL	1570
95% BCA Bootstrap UCL	1550		
90% Chebyshev(Mean, Sd) UCL	2023	95% Chebyshev(Mean, Sd) UCL	2419
97.5% Chebyshev(Mean, Sd) UCL	2969	99% Chebyshev(Mean, Sd) UCL	4049

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	64	Mean	6509
Maximum	10700	Median	6680
SD	3880	Std. Error of Mean	1584
Coefficient of Variation	0.596	Skewness	-0.782
Mean of logged Data	8.125	SD of logged Data	1.966

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9701	95% Adjusted-CLT UCL (Chen-1995)	8574
		95% Modified-t UCL (Johnson-1978)	9617

Nonparametric Distribution Free UCLs

95% CLT UCL	9115	95% Jackknife UCL	9701
95% Standard Bootstrap UCL	8907	95% Bootstrap-t UCL	9389
95% Hall's Bootstrap UCL	9105	95% Percentile Bootstrap UCL	8927
95% BCA Bootstrap UCL	8543		
90% Chebyshev(Mean, Sd) UCL	11261	95% Chebyshev(Mean, Sd) UCL	13414
97.5% Chebyshev(Mean, Sd) UCL	16402	99% Chebyshev(Mean, Sd) UCL	22271

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	81.7	Mean	7814

Maximum	13200	Median	8045
SD	4742	Std. Error of Mean	1936
Coefficient of Variation	0.607	Skewness	-0.695
Mean of logged Data	8.313	SD of logged Data	1.942

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11715	95% Adjusted-CLT UCL (Chen-1995)	10411
		95% Modified-t UCL (Johnson-1978)	11623

Nonparametric Distribution Free UCLs

95% CLT UCL	10998	95% Jackknife UCL	11715
95% Standard Bootstrap UCL	10664	95% Bootstrap-t UCL	11219
95% Hall's Bootstrap UCL	10792	95% Percentile Bootstrap UCL	10548
95% BCA Bootstrap UCL	10477		
90% Chebyshev(Mean, Sd) UCL	13621	95% Chebyshev(Mean, Sd) UCL	16252
97.5% Chebyshev(Mean, Sd) UCL	19904	99% Chebyshev(Mean, Sd) UCL	27076

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	105	Mean	10584
Maximum	17900	Median	10800
SD	6491	Std. Error of Mean	2650
Coefficient of Variation	0.613	Skewness	-0.646
Mean of logged Data	8.605	SD of logged Data	1.963

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15924	95% Adjusted-CLT UCL (Chen-1995)	14196
		95% Modified-t UCL (Johnson-1978)	15808

Nonparametric Distribution Free UCLs

95% CLT UCL	14943	95% Jackknife UCL	15924

95% Standard Bootstrap UCL	14636	95% Bootstrap-t UCL	15665
95% Hall's Bootstrap UCL	14513	95% Percentile Bootstrap UCL	14300
95% BCA Bootstrap UCL	14117		
90% Chebyshev(Mean, Sd) UCL	18534	95% Chebyshev(Mean, Sd) UCL	22135
97.5% Chebyshev(Mean, Sd) UCL	27134	99% Chebyshev(Mean, Sd) UCL	36952

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.3	Mean	5122
Maximum	8760	Median	5265
SD	3186	Std. Error of Mean	1301
Coefficient of Variation	0.622	Skewness	-0.598
Mean of logged Data	7.877	SD of logged Data	1.96

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7743	95% Adjusted-CLT UCL (Chen-1995)	6922
		95% Modified-t UCL (Johnson-1978)	7690

Nonparametric Distribution Free UCLs

95% CLT UCL	7262	95% Jackknife UCL	7743
95% Standard Bootstrap UCL	7096	95% Bootstrap-t UCL	7453
95% Hall's Bootstrap UCL	7079	95% Percentile Bootstrap UCL	6887
95% BCA Bootstrap UCL	6730		
90% Chebyshev(Mean, Sd) UCL	9024	95% Chebyshev(Mean, Sd) UCL	10792
97.5% Chebyshev(Mean, Sd) UCL	13245	99% Chebyshev(Mean, Sd) UCL	18065

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.2	Mean	4283
Maximum	7120	Median	4410
SD	2606	Std. Error of Mean	1064
Coefficient of Variation	0.608	Skewness	-0.709
Mean of logged Data	7.68	SD of logged Data	2.017

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6426	95% Adjusted-CLT UCL (Chen-1995)	5704
		95% Modified-t UCL (Johnson-1978)	6375

Nonparametric Distribution Free UCLs

95% CLT UCL	6033	95% Jackknife UCL	6426
95% Standard Bootstrap UCL	5843	95% Bootstrap-t UCL	6072
95% Hall's Bootstrap UCL	5985	95% Percentile Bootstrap UCL	5817
95% BCA Bootstrap UCL	5707		
90% Chebyshev(Mean, Sd) UCL	7474	95% Chebyshev(Mean, Sd) UCL	8920
97.5% Chebyshev(Mean, Sd) UCL	10926	99% Chebyshev(Mean, Sd) UCL	14867

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	78.6	Mean	8091
Maximum	13300	Median	8390
SD	4778	Std. Error of Mean	1951
Coefficient of Variation	0.591	Skewness	-0.841
Mean of logged Data	8.342	SD of logged Data	1.97

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	12022	95% Adjusted-CLT UCL (Chen-1995)	10585
		95% Modified-t UCL (Johnson-1978)	11911

Nonparametric Distribution Free UCLs

95% CLT UCL	11300	95% Jackknife UCL	12022
95% Standard Bootstrap UCL	10982	95% Bootstrap-t UCL	11199
95% Hall's Bootstrap UCL	11102	95% Percentile Bootstrap UCL	11000
95% BCA Bootstrap UCL	10565		
90% Chebyshev(Mean, Sd) UCL	13943	95% Chebyshev(Mean, Sd) UCL	16594
97.5% Chebyshev(Mean, Sd) UCL	20273	99% Chebyshev(Mean, Sd) UCL	27501

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15	Mean	1348
Maximum	2340	Median	1360
SD	834.5	Std. Error of Mean	340.7
Coefficient of Variation	0.619	Skewness	-0.568
Mean of logged Data	6.562	SD of logged Data	1.917

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2035	95% Adjusted-CLT UCL (Chen-1995)	1824
		95% Modified-t UCL (Johnson-1978)	2021

Nonparametric Distribution Free UCLs

95% CLT UCL	1908	95% Jackknife UCL	2035
95% Standard Bootstrap UCL	1860	95% Bootstrap-t UCL	1959
95% Hall's Bootstrap UCL	1906	95% Percentile Bootstrap UCL	1835
95% BCA Bootstrap UCL	1802		
90% Chebyshev(Mean, Sd) UCL	2370	95% Chebyshev(Mean, Sd) UCL	2833
97.5% Chebyshev(Mean, Sd) UCL	3476	99% Chebyshev(Mean, Sd) UCL	4738

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	103	Mean	11857
Maximum	19900	Median	12350
SD	7382	Std. Error of Mean	3014
Coefficient of Variation	0.623	Skewness	-0.626
Mean of logged Data	8.691	SD of logged Data	2.018

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17930	95% Adjusted-CLT UCL (Chen-1995)	15991
		95% Modified-t UCL (Johnson-1978)	17801

Nonparametric Distribution Free UCLs

95% CLT UCL	16814	95% Jackknife UCL	17930
95% Standard Bootstrap UCL	16326	95% Bootstrap-t UCL	17178
95% Hall's Bootstrap UCL	16853	95% Percentile Bootstrap UCL	16207
95% BCA Bootstrap UCL	15917		
90% Chebyshev(Mean, Sd) UCL	20898	95% Chebyshev(Mean, Sd) UCL	24993
97.5% Chebyshev(Mean, Sd) UCL	30677	99% Chebyshev(Mean, Sd) UCL	41842

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.78	Mean	137.8
Maximum	216	Median	156.5
SD	76.96	Std. Error of Mean	31.42
Coefficient of Variation	0.559	Skewness	-1.248
Mean of logged Data	4.326	SD of logged Data	1.854

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	201.1	95% Adjusted-CLT UCL (Chen-1995)	172.4
		95% Modified-t UCL (Johnson-1978)	198.4

Nonparametric Distribution Free UCLs

95% CLT UCL	189.5	95% Jackknife UCL	201.1
95% Standard Bootstrap UCL	185.7	95% Bootstrap-t UCL	183.8
95% Hall's Bootstrap UCL	174.1	95% Percentile Bootstrap UCL	180.3
95% BCA Bootstrap UCL	175.8		
90% Chebyshev(Mean, Sd) UCL	232.1	95% Chebyshev(Mean, Sd) UCL	274.7
97.5% Chebyshev(Mean, Sd) UCL	334	99% Chebyshev(Mean, Sd) UCL	450.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	60.5	Mean	5887
Maximum	9960	Median	5815
SD	3743	Std. Error of Mean	1528
Coefficient of Variation	0.636	Skewness	-0.473
Mean of logged Data	8.015	SD of logged Data	1.951

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8966	95% Adjusted-CLT UCL (Chen-1995)	8085
		95% Modified-t UCL (Johnson-1978)	8917

Nonparametric Distribution Free UCLs

95% CLT UCL	8400	95% Jackknife UCL	8966
95% Standard Bootstrap UCL	8142	95% Bootstrap-t UCL	9191
95% Hall's Bootstrap UCL	8525	95% Percentile Bootstrap UCL	8217
95% BCA Bootstrap UCL	7942		
90% Chebyshev(Mean, Sd) UCL	10471	95% Chebyshev(Mean, Sd) UCL	12548
97.5% Chebyshev(Mean, Sd) UCL	15431	99% Chebyshev(Mean, Sd) UCL	21092

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	11.1	Mean	295.9
Maximum	422	Median	331.5
SD	145	Std. Error of Mean	59.19
Coefficient of Variation	0.49	Skewness	-2.029
Mean of logged Data	5.284	SD of logged Data	1.414

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	415.1	95% Adjusted-CLT UCL (Chen-1995)	340.8
		95% Modified-t UCL (Johnson-1978)	406.9

Nonparametric Distribution Free UCLs

95% CLT UCL	393.2	95% Jackknife UCL	415.1
95% Standard Bootstrap UCL	385	95% Bootstrap-t UCL	368.4
95% Hall's Bootstrap UCL	353.8	95% Percentile Bootstrap UCL	369.8
95% BCA Bootstrap UCL	358.8		
90% Chebyshev(Mean, Sd) UCL	473.4	95% Chebyshev(Mean, Sd) UCL	553.8
97.5% Chebyshev(Mean, Sd) UCL	665.5	99% Chebyshev(Mean, Sd) UCL	884.8

Suggested UCL to Use

95% Hall's Bootstrap UCL	353.8

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	47.6	Mean	5511
Maximum	9750	Median	5655
SD	3416	Std. Error of Mean	1395

Coefficient of Variation	0.62	Skewness	-0.547
Mean of logged Data	7.928	SD of logged Data	2.019

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8321	95% Adjusted-CLT UCL (Chen-1995)	7473
		95% Modified-t UCL (Johnson-1978)	8269

Nonparametric Distribution Free UCLs

95% CLT UCL	7805	95% Jackknife UCL	8321
95% Standard Bootstrap UCL	7582	95% Bootstrap-t UCL	8031
95% Hall's Bootstrap UCL	8077	95% Percentile Bootstrap UCL	7602
95% BCA Bootstrap UCL	7457		
90% Chebyshev(Mean, Sd) UCL	9695	95% Chebyshev(Mean, Sd) UCL	11590
97.5% Chebyshev(Mean, Sd) UCL	14220	99% Chebyshev(Mean, Sd) UCL	19387

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	108	Mean	11513
Maximum	18900	Median	12150
SD	7078	Std. Error of Mean	2890
Coefficient of Variation	0.615	Skewness	-0.705
Mean of logged Data	8.677	SD of logged Data	1.987

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17336	95% Adjusted-CLT UCL (Chen-1995)	15378
		95% Modified-t UCL (Johnson-1978)	17197

Nonparametric Distribution Free UCLs

95% CLT UCL	16266	95% Jackknife UCL	17336
95% Standard Bootstrap UCL	15765	95% Bootstrap-t UCL	16470
95% Hall's Bootstrap UCL	15946	95% Percentile Bootstrap UCL	15783

95% BCA Bootstrap UCL	15150		
90% Chebyshev(Mean, Sd) UCL	20182	95% Chebyshev(Mean, Sd) UCL	24109
97.5% Chebyshev(Mean, Sd) UCL	29560	99% Chebyshev(Mean, Sd) UCL	40266

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:34:51 PM
From File	Thompson N.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.2	Mean	12
Maximum	12.8	Median	12.05
SD	0.654	Std. Error of Mean	0.267
Coefficient of Variation	0.0545	Skewness	-0.135
Mean of logged Data	2.484	SD of logged Data	0.0547

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.54	95% Adjusted-CLT UCL (Chen-1995)	12.42
		95% Modified-t UCL (Johnson-1978)	12.54

Nonparametric Distribution Free UCLs

95% CLT UCL	12.44	95% Jackknife UCL	12.54
95% Standard Bootstrap UCL	12.4	95% Bootstrap-t UCL	12.54
95% Hall's Bootstrap UCL	12.46	95% Percentile Bootstrap UCL	12.4
95% BCA Bootstrap UCL	12.35		
90% Chebyshev(Mean, Sd) UCL	12.8	95% Chebyshev(Mean, Sd) UCL	13.16
97.5% Chebyshev(Mean, Sd) UCL	13.67	99% Chebyshev(Mean, Sd) UCL	14.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.7	Mean	74.97
Maximum	184	Median	57.65
SD	67.77	Std. Error of Mean	27.67
Coefficient of Variation	0.904	Skewness	0.813

Mean of logged Data	3.897	SD of logged Data	1.049

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	130.7	95% Adjusted-CLT UCL (Chen-1995)	130.3
		95% Modified-t UCL (Johnson-1978)	132.2

Nonparametric Distribution Free UCLs

95% CLT UCL	120.5	95% Jackknife UCL	130.7
95% Standard Bootstrap UCL	116.4	95% Bootstrap-t UCL	146.5
95% Hall's Bootstrap UCL	115	95% Percentile Bootstrap UCL	117.8
95% BCA Bootstrap UCL	126.3		
90% Chebyshev(Mean, Sd) UCL	158	95% Chebyshev(Mean, Sd) UCL	195.6
97.5% Chebyshev(Mean, Sd) UCL	247.8	99% Chebyshev(Mean, Sd) UCL	350.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.2	Mean	44.52
Maximum	46.5	Median	44.15
SD	1.216	Std. Error of Mean	0.496
Coefficient of Variation	0.0273	Skewness	0.929
Mean of logged Data	3.796	SD of logged Data	0.0271

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.52	95% Adjusted-CLT UCL (Chen-1995)	45.53
		95% Modified-t UCL (Johnson-1978)	45.55

Nonparametric Distribution Free UCLs

95% CLT UCL	45.33	95% Jackknife UCL	45.52
95% Standard Bootstrap UCL	45.28	95% Bootstrap-t UCL	46.55
95% Hall's Bootstrap UCL	52.42	95% Percentile Bootstrap UCL	45.35
95% BCA Bootstrap UCL	45.38		
90% Chebyshev(Mean, Sd) UCL	46.01	95% Chebyshev(Mean, Sd) UCL	46.68
97.5% Chebyshev(Mean, Sd) UCL	47.62	99% Chebyshev(Mean, Sd) UCL	49.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.6	Mean	28.9
Maximum	63.4	Median	23.85
SD	18.83	Std. Error of Mean	7.688
Coefficient of Variation	0.652	Skewness	1.496
Mean of logged Data	3.206	SD of logged Data	0.605

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.39	95% Adjusted-CLT UCL (Chen-1995)	46.56
		95% Modified-t UCL (Johnson-1978)	45.17

Nonparametric Distribution Free UCLs

95% CLT UCL	41.55	95% Jackknife UCL	44.39
95% Standard Bootstrap UCL	40.26	95% Bootstrap-t UCL	60.59
95% Hall's Bootstrap UCL	109.5	95% Percentile Bootstrap UCL	42.22
95% BCA Bootstrap UCL	44.67		
90% Chebyshev(Mean, Sd) UCL	51.96	95% Chebyshev(Mean, Sd) UCL	62.41
97.5% Chebyshev(Mean, Sd) UCL	76.91	99% Chebyshev(Mean, Sd) UCL	105.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	35.6	Mean	104.3
Maximum	185	Median	110.5
SD	56.85	Std. Error of Mean	23.21
Coefficient of Variation	0.545	Skewness	0.0835
Mean of logged Data	4.492	SD of logged Data	0.649

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	151.1	95% Adjusted-CLT UCL (Chen-1995)	143.4
		95% Modified-t UCL (Johnson-1978)	151.2

Nonparametric Distribution Free UCLs

95% CLT UCL	142.5	95% Jackknife UCL	151.1
95% Standard Bootstrap UCL	139.2	95% Bootstrap-t UCL	152.2
95% Hall's Bootstrap UCL	139.4	95% Percentile Bootstrap UCL	141
95% BCA Bootstrap UCL	139.4		
90% Chebyshev(Mean, Sd) UCL	174	95% Chebyshev(Mean, Sd) UCL	205.5
97.5% Chebyshev(Mean, Sd) UCL	249.3	99% Chebyshev(Mean, Sd) UCL	335.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	116	Mean	255.5
Maximum	436	Median	240.5
SD	111.2	Std. Error of Mean	45.39
Coefficient of Variation	0.435	Skewness	0.641
Mean of logged Data	5.46	SD of logged Data	0.456

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	347	95% Adjusted-CLT UCL (Chen-1995)	342.8
		95% Modified-t UCL (Johnson-1978)	348.9

Nonparametric Distribution Free UCLs

95% CLT UCL	330.2	95% Jackknife UCL	347
95% Standard Bootstrap UCL	322.8	95% Bootstrap-t UCL	377
95% Hall's Bootstrap UCL	375.4	95% Percentile Bootstrap UCL	328.2
95% BCA Bootstrap UCL	331.3		
90% Chebyshev(Mean, Sd) UCL	391.7	95% Chebyshev(Mean, Sd) UCL	453.3
97.5% Chebyshev(Mean, Sd) UCL	538.9	99% Chebyshev(Mean, Sd) UCL	707.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	882	Mean	2115
Maximum	3400	Median	2185
SD	931.4	Std. Error of Mean	380.2
Coefficient of Variation	0.44	Skewness	-0.012
Mean of logged Data	7.561	SD of logged Data	0.502

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2882	95% Adjusted-CLT UCL (Chen-1995)	2739
		95% Modified-t UCL (Johnson-1978)	2881

Nonparametric Distribution Free UCLs

95% CLT UCL	2741	95% Jackknife UCL	2882
95% Standard Bootstrap UCL	2692	95% Bootstrap-t UCL	2897
95% Hall's Bootstrap UCL	2731	95% Percentile Bootstrap UCL	2700
95% BCA Bootstrap UCL	2700		
90% Chebyshev(Mean, Sd) UCL	3256	95% Chebyshev(Mean, Sd) UCL	3773
97.5% Chebyshev(Mean, Sd) UCL	4490	99% Chebyshev(Mean, Sd) UCL	5899

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1030	Mean	2607
Maximum	4400	Median	2705
SD	1254	Std. Error of Mean	511.8
Coefficient of Variation	0.481	Skewness	0.104
Mean of logged Data	7.751	SD of logged Data	0.55

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3638	95% Adjusted-CLT UCL (Chen-1995)	3472
		95% Modified-t UCL (Johnson-1978)	3642

Nonparametric Distribution Free UCLs

95% CLT UCL	3448	95% Jackknife UCL	3638
95% Standard Bootstrap UCL	3360	95% Bootstrap-t UCL	3685
95% Hall's Bootstrap UCL	3449	95% Percentile Bootstrap UCL	3395
95% BCA Bootstrap UCL	3340		
90% Chebyshev(Mean, Sd) UCL	4142	95% Chebyshev(Mean, Sd) UCL	4837
97.5% Chebyshev(Mean, Sd) UCL	5803	99% Chebyshev(Mean, Sd) UCL	7699

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1320	Mean	3447
Maximum	5650	Median	3575
SD	1631	Std. Error of Mean	665.7
Coefficient of Variation	0.473	Skewness	-0.0371
Mean of logged Data	8.032	SD of logged Data	0.551

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4788	95% Adjusted-CLT UCL (Chen-1995)	4531
		95% Modified-t UCL (Johnson-1978)	4786

Nonparametric Distribution Free UCLs

95% CLT UCL	4542	95% Jackknife UCL	4788
95% Standard Bootstrap UCL	4439	95% Bootstrap-t UCL	4859
95% Hall's Bootstrap UCL	4488	95% Percentile Bootstrap UCL	4433
95% BCA Bootstrap UCL	4405		
90% Chebyshev(Mean, Sd) UCL	5444	95% Chebyshev(Mean, Sd) UCL	6348
97.5% Chebyshev(Mean, Sd) UCL	7604	99% Chebyshev(Mean, Sd) UCL	10070

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	634	Mean	1757
Maximum	2970	Median	1745
SD	932.7	Std. Error of Mean	380.8
Coefficient of Variation	0.531	Skewness	0.0829
Mean of logged Data	7.33	SD of logged Data	0.611

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2524	95% Adjusted-CLT UCL (Chen-1995)	2397
		95% Modified-t UCL (Johnson-1978)	2527

Nonparametric Distribution Free UCLs

95% CLT UCL	2383	95% Jackknife UCL	2524
95% Standard Bootstrap UCL	2336	95% Bootstrap-t UCL	2603
95% Hall's Bootstrap UCL	2312	95% Percentile Bootstrap UCL	2340
95% BCA Bootstrap UCL	2335		
90% Chebyshev(Mean, Sd) UCL	2900	95% Chebyshev(Mean, Sd) UCL	3417
97.5% Chebyshev(Mean, Sd) UCL	4135	99% Chebyshev(Mean, Sd) UCL	5546

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	562	Mean	1375
Maximum	2250	Median	1410
SD	634.9	Std. Error of Mean	259.2
Coefficient of Variation	0.462	Skewness	0.0329
Mean of logged Data	7.121	SD of logged Data	0.527

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1897	95% Adjusted-CLT UCL (Chen-1995)	1805
		95% Modified-t UCL (Johnson-1978)	1898

Nonparametric Distribution Free UCLs

95% CLT UCL	1801	95% Jackknife UCL	1897
95% Standard Bootstrap UCL	1760	95% Bootstrap-t UCL	1932
95% Hall's Bootstrap UCL	1783	95% Percentile Bootstrap UCL	1775
95% BCA Bootstrap UCL	1755		
90% Chebyshev(Mean, Sd) UCL	2152	95% Chebyshev(Mean, Sd) UCL	2505
97.5% Chebyshev(Mean, Sd) UCL	2994	99% Chebyshev(Mean, Sd) UCL	3954

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1130	Mean	2638
Maximum	4420	Median	2695
SD	1207	Std. Error of Mean	492.7
Coefficient of Variation	0.457	Skewness	0.223
Mean of logged Data	7.779	SD of logged Data	0.507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3631	95% Adjusted-CLT UCL (Chen-1995)	3497
		95% Modified-t UCL (Johnson-1978)	3639

Nonparametric Distribution Free UCLs

95% CLT UCL	3449	95% Jackknife UCL	3631
95% Standard Bootstrap UCL	3383	95% Bootstrap-t UCL	3731
95% Hall's Bootstrap UCL	3494	95% Percentile Bootstrap UCL	3423
95% BCA Bootstrap UCL	3393		
90% Chebyshev(Mean, Sd) UCL	4117	95% Chebyshev(Mean, Sd) UCL	4786
97.5% Chebyshev(Mean, Sd) UCL	5716	99% Chebyshev(Mean, Sd) UCL	7541

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	189	Mean	467.7
Maximum	793	Median	470
SD	250.9	Std. Error of Mean	102.4
Coefficient of Variation	0.536	Skewness	0.0728
Mean of logged Data	6.003	SD of logged Data	0.616

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	674.1	95% Adjusted-CLT UCL (Chen-1995)	639.4
		95% Modified-t UCL (Johnson-1978)	674.6

Nonparametric Distribution Free UCLs

95% CLT UCL	636.1	95% Jackknife UCL	674.1
95% Standard Bootstrap UCL	621.2	95% Bootstrap-t UCL	679
95% Hall's Bootstrap UCL	623.4	95% Percentile Bootstrap UCL	625.2
95% BCA Bootstrap UCL	621.5		
90% Chebyshev(Mean, Sd) UCL	775	95% Chebyshev(Mean, Sd) UCL	914.1
97.5% Chebyshev(Mean, Sd) UCL	1107	99% Chebyshev(Mean, Sd) UCL	1487

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1500	Mean	3513
Maximum	5850	Median	3460
SD	1511	Std. Error of Mean	616.7
Coefficient of Variation	0.43	Skewness	0.352
Mean of logged Data	8.078	SD of logged Data	0.472

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4756	95% Adjusted-CLT UCL (Chen-1995)	4622
		95% Modified-t UCL (Johnson-1978)	4771

Nonparametric Distribution Free UCLs

95% CLT UCL	4528	95% Jackknife UCL	4756
95% Standard Bootstrap UCL	4432	95% Bootstrap-t UCL	4886
95% Hall's Bootstrap UCL	4785	95% Percentile Bootstrap UCL	4462
95% BCA Bootstrap UCL	4530		
90% Chebyshev(Mean, Sd) UCL	5363	95% Chebyshev(Mean, Sd) UCL	6202
97.5% Chebyshev(Mean, Sd) UCL	7365	99% Chebyshev(Mean, Sd) UCL	9650

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.5	Mean	38.62
Maximum	69.1	Median	39.2
SD	18.51	Std. Error of Mean	7.557
Coefficient of Variation	0.479	Skewness	0.666
Mean of logged Data	3.551	SD of logged Data	0.509

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	53.84	95% Adjusted-CLT UCL (Chen-1995)	53.24
		95% Modified-t UCL (Johnson-1978)	54.19

Nonparametric Distribution Free UCLs

95% CLT UCL	51.05	95% Jackknife UCL	53.84
95% Standard Bootstrap UCL	50.05	95% Bootstrap-t UCL	55.81
95% Hall's Bootstrap UCL	56.72	95% Percentile Bootstrap UCL	50.7
95% BCA Bootstrap UCL	51.48		
90% Chebyshev(Mean, Sd) UCL	61.29	95% Chebyshev(Mean, Sd) UCL	71.56
97.5% Chebyshev(Mean, Sd) UCL	85.81	99% Chebyshev(Mean, Sd) UCL	113.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	739	Mean	2003
Maximum	3210	Median	2110
SD	1004	Std. Error of Mean	410
Coefficient of Variation	0.501	Skewness	-0.149
Mean of logged Data	7.472	SD of logged Data	0.592

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2829	95% Adjusted-CLT UCL (Chen-1995)	2651
		95% Modified-t UCL (Johnson-1978)	2825

Nonparametric Distribution Free UCLs

95% CLT UCL	2678	95% Jackknife UCL	2829
95% Standard Bootstrap UCL	2617	95% Bootstrap-t UCL	2781
95% Hall's Bootstrap UCL	2493	95% Percentile Bootstrap UCL	2600
95% BCA Bootstrap UCL	2592		
90% Chebyshev(Mean, Sd) UCL	3233	95% Chebyshev(Mean, Sd) UCL	3790
97.5% Chebyshev(Mean, Sd) UCL	4564	99% Chebyshev(Mean, Sd) UCL	6083

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.8	Mean	98.05
Maximum	231	Median	80.9
SD	71.71	Std. Error of Mean	29.27
Coefficient of Variation	0.731	Skewness	1.57
Mean of logged Data	4.385	SD of logged Data	0.683

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	157	95% Adjusted-CLT UCL (Chen-1995)	166.3
		95% Modified-t UCL (Johnson-1978)	160.2

Nonparametric Distribution Free UCLs

95% CLT UCL	146.2	95% Jackknife UCL	157
95% Standard Bootstrap UCL	141.1	95% Bootstrap-t UCL	212.3
95% Hall's Bootstrap UCL	393.3	95% Percentile Bootstrap UCL	144.2
95% BCA Bootstrap UCL	156.4		
90% Chebyshev(Mean, Sd) UCL	185.9	95% Chebyshev(Mean, Sd) UCL	225.7
97.5% Chebyshev(Mean, Sd) UCL	280.9	99% Chebyshev(Mean, Sd) UCL	389.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	688	Mean	1301
Maximum	2110	Median	1260
SD	489.1	Std. Error of Mean	199.7
Coefficient of Variation	0.376	Skewness	0.704
Mean of logged Data	7.111	SD of logged Data	0.383

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1703	95% Adjusted-CLT UCL (Chen-1995)	1690
		95% Modified-t UCL (Johnson-1978)	1713

Nonparametric Distribution Free UCLs

95% CLT UCL	1629	95% Jackknife UCL	1703
95% Standard Bootstrap UCL	1593	95% Bootstrap-t UCL	1780
95% Hall's Bootstrap UCL	1842	95% Percentile Bootstrap UCL	1603
95% BCA Bootstrap UCL	1637		
90% Chebyshev(Mean, Sd) UCL	1900	95% Chebyshev(Mean, Sd) UCL	2171
97.5% Chebyshev(Mean, Sd) UCL	2548	99% Chebyshev(Mean, Sd) UCL	3287

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1530	Mean	3547
Maximum	6100	Median	3500
SD	1617	Std. Error of Mean	660.3
Coefficient of Variation	0.456	Skewness	0.495
Mean of logged Data	8.079	SD of logged Data	0.49

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4877	95% Adjusted-CLT UCL (Chen-1995)	4775
		95% Modified-t UCL (Johnson-1978)	4899

Nonparametric Distribution Free UCLs

95% CLT UCL	4633	95% Jackknife UCL	4877
95% Standard Bootstrap UCL	4517	95% Bootstrap-t UCL	5090
95% Hall's Bootstrap UCL	5012	95% Percentile Bootstrap UCL	4572
95% BCA Bootstrap UCL	4620		
90% Chebyshev(Mean, Sd) UCL	5528	95% Chebyshev(Mean, Sd) UCL	6425
97.5% Chebyshev(Mean, Sd) UCL	7670	99% Chebyshev(Mean, Sd) UCL	10116

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:36:00 PM
From File	Thompson O.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	9.73	Mean	11.71
Maximum	13.5	Median	11.85
SD	1.905	Std. Error of Mean	0.778
Coefficient of Variation	0.163	Skewness	-0.0512
Mean of logged Data	2.449	SD of logged Data	0.164

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.28	95% Adjusted-CLT UCL (Chen-1995)	12.97
		95% Modified-t UCL (Johnson-1978)	13.27

Nonparametric Distribution Free UCLs

95% CLT UCL	12.99	95% Jackknife UCL	13.28
95% Standard Bootstrap UCL	12.87	95% Bootstrap-t UCL	13.27
95% Hall's Bootstrap UCL	12.37	95% Percentile Bootstrap UCL	12.87
95% BCA Bootstrap UCL	12.85		
90% Chebyshev(Mean, Sd) UCL	14.04	95% Chebyshev(Mean, Sd) UCL	15.1
97.5% Chebyshev(Mean, Sd) UCL	16.57	99% Chebyshev(Mean, Sd) UCL	19.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.4	Mean	38.03
Maximum	75.4	Median	33.05
SD	23.7	Std. Error of Mean	9.677
Coefficient of Variation	0.623	Skewness	0.728

Mean of logged Data	3.47	SD of logged Data	0.64

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.53	95% Adjusted-CLT UCL (Chen-1995)	57.02
		95% Modified-t UCL (Johnson-1978)	58.01

Nonparametric Distribution Free UCLs

95% CLT UCL	53.95	95% Jackknife UCL	57.53
95% Standard Bootstrap UCL	52.47	95% Bootstrap-t UCL	62.67
95% Hall's Bootstrap UCL	51.25	95% Percentile Bootstrap UCL	53.08
95% BCA Bootstrap UCL	53.75		
90% Chebyshev(Mean, Sd) UCL	67.06	95% Chebyshev(Mean, Sd) UCL	80.21
97.5% Chebyshev(Mean, Sd) UCL	98.46	99% Chebyshev(Mean, Sd) UCL	134.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.6	Mean	43.02
Maximum	48.3	Median	43.25
SD	5.167	Std. Error of Mean	2.109
Coefficient of Variation	0.12	Skewness	-0.022
Mean of logged Data	3.756	SD of logged Data	0.121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.27	95% Adjusted-CLT UCL (Chen-1995)	46.47
		95% Modified-t UCL (Johnson-1978)	47.26

Nonparametric Distribution Free UCLs

95% CLT UCL	46.49	95% Jackknife UCL	47.27
95% Standard Bootstrap UCL	46.19	95% Bootstrap-t UCL	47.37
95% Hall's Bootstrap UCL	44.82	95% Percentile Bootstrap UCL	46.18
95% BCA Bootstrap UCL	46.18		
90% Chebyshev(Mean, Sd) UCL	49.34	95% Chebyshev(Mean, Sd) UCL	52.21
97.5% Chebyshev(Mean, Sd) UCL	56.19	99% Chebyshev(Mean, Sd) UCL	64

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.99	Mean	9.198
Maximum	15.8	Median	8.205
SD	5.868	Std. Error of Mean	2.396
Coefficient of Variation	0.638	Skewness	0.205
Mean of logged Data	2.016	SD of logged Data	0.724

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.03	95% Adjusted-CLT UCL (Chen-1995)	13.35
		95% Modified-t UCL (Johnson-1978)	14.06

Nonparametric Distribution Free UCLs

95% CLT UCL	13.14	95% Jackknife UCL	14.03
95% Standard Bootstrap UCL	12.78	95% Bootstrap-t UCL	13.59
95% Hall's Bootstrap UCL	11.71	95% Percentile Bootstrap UCL	12.95
95% BCA Bootstrap UCL	12.92		
90% Chebyshev(Mean, Sd) UCL	16.39	95% Chebyshev(Mean, Sd) UCL	19.64
97.5% Chebyshev(Mean, Sd) UCL	24.16	99% Chebyshev(Mean, Sd) UCL	33.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.27	Mean	28.74
Maximum	51	Median	29.8
SD	20.98	Std. Error of Mean	8.567
Coefficient of Variation	0.73	Skewness	-0.0425
Mean of logged Data	3.037	SD of logged Data	0.951

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46	95% Adjusted-CLT UCL (Chen-1995)	42.67
		95% Modified-t UCL (Johnson-1978)	45.97

Nonparametric Distribution Free UCLs

95% CLT UCL	42.83	95% Jackknife UCL	46
95% Standard Bootstrap UCL	41.66	95% Bootstrap-t UCL	46.12
95% Hall's Bootstrap UCL	36.59	95% Percentile Bootstrap UCL	41.67
95% BCA Bootstrap UCL	41.54		
90% Chebyshev(Mean, Sd) UCL	54.44	95% Chebyshev(Mean, Sd) UCL	66.08
97.5% Chebyshev(Mean, Sd) UCL	82.24	99% Chebyshev(Mean, Sd) UCL	114

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.2	Mean	105.5
Maximum	173	Median	122.9
SD	69.57	Std. Error of Mean	28.4
Coefficient of Variation	0.659	Skewness	-0.382
Mean of logged Data	4.356	SD of logged Data	0.967

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	162.7	95% Adjusted-CLT UCL (Chen-1995)	147.5
		95% Modified-t UCL (Johnson-1978)	162

Nonparametric Distribution Free UCLs

95% CLT UCL	152.2	95% Jackknife UCL	162.7
95% Standard Bootstrap UCL	148.3	95% Bootstrap-t UCL	158.3
95% Hall's Bootstrap UCL	135.5	95% Percentile Bootstrap UCL	146.7
95% BCA Bootstrap UCL	143.2		
90% Chebyshev(Mean, Sd) UCL	190.7	95% Chebyshev(Mean, Sd) UCL	229.3

97.5% Chebyshev(Mean, Sd) UCL	282.9	99% Chebyshev(Mean, Sd) UCL	388.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	201	Mean	728.2
Maximum	1270	Median	757
SD	501.1	Std. Error of Mean	204.6
Coefficient of Variation	0.688	Skewness	-0.0166
Mean of logged Data	6.328	SD of logged Data	0.843

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1140	95% Adjusted-CLT UCL (Chen-1995)	1063
		95% Modified-t UCL (Johnson-1978)	1140

Nonparametric Distribution Free UCLs

95% CLT UCL	1065	95% Jackknife UCL	1140
95% Standard Bootstrap UCL	1035	95% Bootstrap-t UCL	1149
95% Hall's Bootstrap UCL	909.3	95% Percentile Bootstrap UCL	1034
95% BCA Bootstrap UCL	1032		
90% Chebyshev(Mean, Sd) UCL	1342	95% Chebyshev(Mean, Sd) UCL	1620
97.5% Chebyshev(Mean, Sd) UCL	2006	99% Chebyshev(Mean, Sd) UCL	2764

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	285	Mean	893.7
Maximum	1530	Median	893.5
SD	614.6	Std. Error of Mean	250.9
Coefficient of Variation	0.688	Skewness	0.00441
Mean of logged Data	6.539	SD of logged Data	0.824

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1399	95% Adjusted-CLT UCL (Chen-1995)	1307
		95% Modified-t UCL (Johnson-1978)	1399

Nonparametric Distribution Free UCLs

95% CLT UCL	1306	95% Jackknife UCL	1399
95% Standard Bootstrap UCL	1273	95% Bootstrap-t UCL	1393
95% Hall's Bootstrap UCL	1108	95% Percentile Bootstrap UCL	1273
95% BCA Bootstrap UCL	1273		
90% Chebyshev(Mean, Sd) UCL	1646	95% Chebyshev(Mean, Sd) UCL	1987
97.5% Chebyshev(Mean, Sd) UCL	2461	99% Chebyshev(Mean, Sd) UCL	3390

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	364	Mean	1205
Maximum	2060	Median	1222
SD	837.7	Std. Error of Mean	342
Coefficient of Variation	0.695	Skewness	-0.012
Mean of logged Data	6.828	SD of logged Data	0.845

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1894	95% Adjusted-CLT UCL (Chen-1995)	1766
		95% Modified-t UCL (Johnson-1978)	1894

Nonparametric Distribution Free UCLs

95% CLT UCL	1768	95% Jackknife UCL	1894
95% Standard Bootstrap UCL	1726	95% Bootstrap-t UCL	1885
95% Hall's Bootstrap UCL	1493	95% Percentile Bootstrap UCL	1721

95% BCA Bootstrap UCL	1731		
90% Chebyshev(Mean, Sd) UCL	2231	95% Chebyshev(Mean, Sd) UCL	2696
97.5% Chebyshev(Mean, Sd) UCL	3341	99% Chebyshev(Mean, Sd) UCL	4608

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	179	Mean	602.2
Maximum	1010	Median	614
SD	421.6	Std. Error of Mean	172.1
Coefficient of Variation	0.7	Skewness	-0.0198
Mean of logged Data	6.129	SD of logged Data	0.854

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	949	95% Adjusted-CLT UCL (Chen-1995)	883.8
		95% Modified-t UCL (Johnson-1978)	948.8

Nonparametric Distribution Free UCLs

95% CLT UCL	885.3	95% Jackknife UCL	949
95% Standard Bootstrap UCL	858.4	95% Bootstrap-t UCL	937.2
95% Hall's Bootstrap UCL	745.2	95% Percentile Bootstrap UCL	859.8
95% BCA Bootstrap UCL	858.7		
90% Chebyshev(Mean, Sd) UCL	1119	95% Chebyshev(Mean, Sd) UCL	1352
97.5% Chebyshev(Mean, Sd) UCL	1677	99% Chebyshev(Mean, Sd) UCL	2315

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	129	Mean	493.7
Maximum	874	Median	498.5
SD	364.7	Std. Error of Mean	148.9
Coefficient of Variation	0.739	Skewness	-0.00316
Mean of logged Data	5.887	SD of logged Data	0.927

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	793.7	95% Adjusted-CLT UCL (Chen-1995)	738.4
		95% Modified-t UCL (Johnson-1978)	793.7

Nonparametric Distribution Free UCLs

95% CLT UCL	738.6	95% Jackknife UCL	793.7
95% Standard Bootstrap UCL	717	95% Bootstrap-t UCL	809.6
95% Hall's Bootstrap UCL	622.2	95% Percentile Bootstrap UCL	717.8
95% BCA Bootstrap UCL	720		
90% Chebyshev(Mean, Sd) UCL	940.4	95% Chebyshev(Mean, Sd) UCL	1143
97.5% Chebyshev(Mean, Sd) UCL	1424	99% Chebyshev(Mean, Sd) UCL	1975

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	221	Mean	905.5
Maximum	1600	Median	931.5
SD	659.6	Std. Error of Mean	269.3
Coefficient of Variation	0.728	Skewness	-0.0254
Mean of logged Data	6.498	SD of logged Data	0.927

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1448	95% Adjusted-CLT UCL (Chen-1995)	1345
		95% Modified-t UCL (Johnson-1978)	1448

Nonparametric Distribution Free UCLs

95% CLT UCL	1348	95% Jackknife UCL	1448
95% Standard Bootstrap UCL	1310	95% Bootstrap-t UCL	1452
95% Hall's Bootstrap UCL	1144	95% Percentile Bootstrap UCL	1308
95% BCA Bootstrap UCL	1311		
90% Chebyshev(Mean, Sd) UCL	1713	95% Chebyshev(Mean, Sd) UCL	2079
97.5% Chebyshev(Mean, Sd) UCL	2587	99% Chebyshev(Mean, Sd) UCL	3585

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	53.1	Mean	166.3
Maximum	285	Median	164.6
SD	113.9	Std. Error of Mean	46.5
Coefficient of Variation	0.685	Skewness	0.0157
Mean of logged Data	4.86	SD of logged Data	0.822

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	260	95% Adjusted-CLT UCL (Chen-1995)	243.1
		95% Modified-t UCL (Johnson-1978)	260

Nonparametric Distribution Free UCLs

95% CLT UCL	242.7	95% Jackknife UCL	260
95% Standard Bootstrap UCL	235.9	95% Bootstrap-t UCL	260.7
95% Hall's Bootstrap UCL	207.6	95% Percentile Bootstrap UCL	237
95% BCA Bootstrap UCL	237		
90% Chebyshev(Mean, Sd) UCL	305.8	95% Chebyshev(Mean, Sd) UCL	369
97.5% Chebyshev(Mean, Sd) UCL	456.7	99% Chebyshev(Mean, Sd) UCL	629

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	247	Mean	1267
Maximum	2200	Median	1363
SD	865.4	Std. Error of Mean	353.3
Coefficient of Variation	0.683	Skewness	-0.14
Mean of logged Data	6.853	SD of logged Data	0.924

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1979	95% Adjusted-CLT UCL (Chen-1995)	1827
		95% Modified-t UCL (Johnson-1978)	1976

Nonparametric Distribution Free UCLs

95% CLT UCL	1848	95% Jackknife UCL	1979
95% Standard Bootstrap UCL	1797	95% Bootstrap-t UCL	1977
95% Hall's Bootstrap UCL	1633	95% Percentile Bootstrap UCL	1806
95% BCA Bootstrap UCL	1792		
90% Chebyshev(Mean, Sd) UCL	2327	95% Chebyshev(Mean, Sd) UCL	2807
97.5% Chebyshev(Mean, Sd) UCL	3474	99% Chebyshev(Mean, Sd) UCL	4783

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.23	Mean	13.18
Maximum	20.1	Median	17.65
SD	8.336	Std. Error of Mean	3.403
Coefficient of Variation	0.632	Skewness	-0.914
Mean of logged Data	2.247	SD of logged Data	1.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	20.04	95% Adjusted-CLT UCL (Chen-1995)	17.42
		95% Modified-t UCL (Johnson-1978)	19.83

Nonparametric Distribution Free UCLs

95% CLT UCL	18.78	95% Jackknife UCL	20.04
95% Standard Bootstrap UCL	18.32	95% Bootstrap-t UCL	18.64
95% Hall's Bootstrap UCL	16.53	95% Percentile Bootstrap UCL	18.43
95% BCA Bootstrap UCL	18.13		
90% Chebyshev(Mean, Sd) UCL	23.39	95% Chebyshev(Mean, Sd) UCL	28.01
97.5% Chebyshev(Mean, Sd) UCL	34.43	99% Chebyshev(Mean, Sd) UCL	47.04

Suggested UCL to Use

95% Hall's Bootstrap UCL	16.53

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	234	Mean	696
Maximum	1160	Median	698
SD	467	Std. Error of Mean	190.7
Coefficient of Variation	0.671	Skewness	-0.00217
Mean of logged Data	6.306	SD of logged Data	0.792

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1080	95% Adjusted-CLT UCL (Chen-1995)	1009
		95% Modified-t UCL (Johnson-1978)	1080

Nonparametric Distribution Free UCLs

95% CLT UCL	1010	95% Jackknife UCL	1080
95% Standard Bootstrap UCL	978.8	95% Bootstrap-t UCL	1076
95% Hall's Bootstrap UCL	852.8	95% Percentile Bootstrap UCL	987.7
95% BCA Bootstrap UCL	981		
90% Chebyshev(Mean, Sd) UCL	1268	95% Chebyshev(Mean, Sd) UCL	1527
97.5% Chebyshev(Mean, Sd) UCL	1887	99% Chebyshev(Mean, Sd) UCL	2593

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.46	Mean	26.28
Maximum	51.2	Median	23.3
SD	18.24	Std. Error of Mean	7.446
Coefficient of Variation	0.694	Skewness	0.331
Mean of logged Data	3.025	SD of logged Data	0.798

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.28	95% Adjusted-CLT UCL (Chen-1995)	39.6
		95% Modified-t UCL (Johnson-1978)	41.45

Nonparametric Distribution Free UCLs

95% CLT UCL	38.52	95% Jackknife UCL	41.28
95% Standard Bootstrap UCL	37.16	95% Bootstrap-t UCL	42.09
95% Hall's Bootstrap UCL	34.39	95% Percentile Bootstrap UCL	38.11
95% BCA Bootstrap UCL	38.13		
90% Chebyshev(Mean, Sd) UCL	48.62	95% Chebyshev(Mean, Sd) UCL	58.73
97.5% Chebyshev(Mean, Sd) UCL	72.78	99% Chebyshev(Mean, Sd) UCL	100.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	83.7	Mean	530.3
Maximum	913	Median	609.5
SD	363.3	Std. Error of Mean	148.3
Coefficient of Variation	0.685	Skewness	-0.28
Mean of logged Data	5.947	SD of logged Data	1.005

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	829.2	95% Adjusted-CLT UCL (Chen-1995)	756.1
		95% Modified-t UCL (Johnson-1978)	826.4

Nonparametric Distribution Free UCLs

95% CLT UCL	774.3	95% Jackknife UCL	829.2
95% Standard Bootstrap UCL	751.2	95% Bootstrap-t UCL	796
95% Hall's Bootstrap UCL	693.5	95% Percentile Bootstrap UCL	743.5
95% BCA Bootstrap UCL	743.5		
90% Chebyshev(Mean, Sd) UCL	975.3	95% Chebyshev(Mean, Sd) UCL	1177
97.5% Chebyshev(Mean, Sd) UCL	1457	99% Chebyshev(Mean, Sd) UCL	2006

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	247	Mean	1228
Maximum	2140	Median	1280
SD	859	Std. Error of Mean	350.7
Coefficient of Variation	0.7	Skewness	-0.0815
Mean of logged Data	6.814	SD of logged Data	0.927

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1934	95% Adjusted-CLT UCL (Chen-1995)	1792
		95% Modified-t UCL (Johnson-1978)	1932

Nonparametric Distribution Free UCLs

95% CLT UCL	1804	95% Jackknife UCL	1934
95% Standard Bootstrap UCL	1750	95% Bootstrap-t UCL	1945
95% Hall's Bootstrap UCL	1580	95% Percentile Bootstrap UCL	1755
95% BCA Bootstrap UCL	1760		
90% Chebyshev(Mean, Sd) UCL	2280	95% Chebyshev(Mean, Sd) UCL	2756
97.5% Chebyshev(Mean, Sd) UCL	3417	99% Chebyshev(Mean, Sd) UCL	4717

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:37:15 PM
From File	Thompson P.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.02	Mean	11.67
Maximum	13.4	Median	12.15
SD	1.6	Std. Error of Mean	0.653
Coefficient of Variation	0.137	Skewness	-0.963
Mean of logged Data	2.449	SD of logged Data	0.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.99	95% Adjusted-CLT UCL (Chen-1995)	12.47
		95% Modified-t UCL (Johnson-1978)	12.94

Nonparametric Distribution Free UCLs

95% CLT UCL	12.74	95% Jackknife UCL	12.99
95% Standard Bootstrap UCL	12.66	95% Bootstrap-t UCL	12.74
95% Hall's Bootstrap UCL	12.45	95% Percentile Bootstrap UCL	12.58
95% BCA Bootstrap UCL	12.53		
90% Chebyshev(Mean, Sd) UCL	13.63	95% Chebyshev(Mean, Sd) UCL	14.52
97.5% Chebyshev(Mean, Sd) UCL	15.75	99% Chebyshev(Mean, Sd) UCL	18.17

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.5	Mean	86.13
Maximum	173	Median	83.5
SD	51.67	Std. Error of Mean	21.09
Coefficient of Variation	0.6	Skewness	0.739

Mean of logged Data	4.271	SD of logged Data	0.725

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	128.6	95% Adjusted-CLT UCL (Chen-1995)	127.6
		95% Modified-t UCL (Johnson-1978)	129.7

Nonparametric Distribution Free UCLs

95% CLT UCL	120.8	95% Jackknife UCL	128.6
95% Standard Bootstrap UCL	117.9	95% Bootstrap-t UCL	135.1
95% Hall's Bootstrap UCL	173.6	95% Percentile Bootstrap UCL	118.4
95% BCA Bootstrap UCL	119.2		
90% Chebyshev(Mean, Sd) UCL	149.4	95% Chebyshev(Mean, Sd) UCL	178.1
97.5% Chebyshev(Mean, Sd) UCL	217.9	99% Chebyshev(Mean, Sd) UCL	296

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.2	Mean	45.03
Maximum	49.2	Median	45.45
SD	2.917	Std. Error of Mean	1.191
Coefficient of Variation	0.0648	Skewness	-0.493
Mean of logged Data	3.806	SD of logged Data	0.0657

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.43	95% Adjusted-CLT UCL (Chen-1995)	46.74
		95% Modified-t UCL (Johnson-1978)	47.39

Nonparametric Distribution Free UCLs

95% CLT UCL	46.99	95% Jackknife UCL	47.43
95% Standard Bootstrap UCL	46.87	95% Bootstrap-t UCL	46.93
95% Hall's Bootstrap UCL	47.02	95% Percentile Bootstrap UCL	46.77
95% BCA Bootstrap UCL	46.75		
90% Chebyshev(Mean, Sd) UCL	48.61	95% Chebyshev(Mean, Sd) UCL	50.22
97.5% Chebyshev(Mean, Sd) UCL	52.47	99% Chebyshev(Mean, Sd) UCL	56.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.19	Mean	11
Maximum	36.5	Median	6.455
SD	12.62	Std. Error of Mean	5.15
Coefficient of Variation	1.147	Skewness	2.346
Mean of logged Data	2.042	SD of logged Data	0.815

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.37	95% Adjusted-CLT UCL (Chen-1995)	24.74
		95% Modified-t UCL (Johnson-1978)	22.2

Nonparametric Distribution Free UCLs

95% CLT UCL	19.47	95% Jackknife UCL	21.37
95% Standard Bootstrap UCL	18.94	95% Bootstrap-t UCL	61.96
95% Hall's Bootstrap UCL	62.08	95% Percentile Bootstrap UCL	20.99
95% BCA Bootstrap UCL	21.75		
90% Chebyshev(Mean, Sd) UCL	26.45	95% Chebyshev(Mean, Sd) UCL	33.45
97.5% Chebyshev(Mean, Sd) UCL	43.16	99% Chebyshev(Mean, Sd) UCL	62.24

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.35	Mean	23.61
Maximum	73.7	Median	14.7
SD	25.45	Std. Error of Mean	10.39
Coefficient of Variation	1.078	Skewness	2.085
Mean of logged Data	2.787	SD of logged Data	0.894

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.54	95% Adjusted-CLT UCL (Chen-1995)	50.14
		95% Modified-t UCL (Johnson-1978)	46.01

Nonparametric Distribution Free UCLs

95% CLT UCL	40.69	95% Jackknife UCL	44.54
95% Standard Bootstrap UCL	39.17	95% Bootstrap-t UCL	75.53
95% Hall's Bootstrap UCL	104.1	95% Percentile Bootstrap UCL	41.01
95% BCA Bootstrap UCL	45.08		
90% Chebyshev(Mean, Sd) UCL	54.77	95% Chebyshev(Mean, Sd) UCL	68.89
97.5% Chebyshev(Mean, Sd) UCL	88.49	99% Chebyshev(Mean, Sd) UCL	127

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.1	Mean	58.97
Maximum	143	Median	41.2
SD	48.83	Std. Error of Mean	19.94
Coefficient of Variation	0.828	Skewness	1.204
Mean of logged Data	3.794	SD of logged Data	0.821

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	99.14	95% Adjusted-CLT UCL (Chen-1995)	102.2
		95% Modified-t UCL (Johnson-1978)	100.8

Nonparametric Distribution Free UCLs

95% CLT UCL	91.76	95% Jackknife UCL	99.14
95% Standard Bootstrap UCL	89.31	95% Bootstrap-t UCL	166.5
95% Hall's Bootstrap UCL	100.7	95% Percentile Bootstrap UCL	90.6
95% BCA Bootstrap UCL	98.6		
90% Chebyshev(Mean, Sd) UCL	118.8	95% Chebyshev(Mean, Sd) UCL	145.9
97.5% Chebyshev(Mean, Sd) UCL	183.5	99% Chebyshev(Mean, Sd) UCL	257.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	186	Mean	416.5
Maximum	956	Median	322
SD	300.7	Std. Error of Mean	122.8
Coefficient of Variation	0.722	Skewness	1.376
Mean of logged Data	5.834	SD of logged Data	0.675

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	663.9	95% Adjusted-CLT UCL (Chen-1995)	692.1
		95% Modified-t UCL (Johnson-1978)	675.4

Nonparametric Distribution Free UCLs

95% CLT UCL	618.4	95% Jackknife UCL	663.9
95% Standard Bootstrap UCL	597.6	95% Bootstrap-t UCL	796.3
95% Hall's Bootstrap UCL	1313	95% Percentile Bootstrap UCL	613.7
95% BCA Bootstrap UCL	669.5		
90% Chebyshev(Mean, Sd) UCL	784.8	95% Chebyshev(Mean, Sd) UCL	951.6
97.5% Chebyshev(Mean, Sd) UCL	1183	99% Chebyshev(Mean, Sd) UCL	1638

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	216	Mean	531
Maximum	1220	Median	422.5
SD	384.5	Std. Error of Mean	157
Coefficient of Variation	0.724	Skewness	1.366
Mean of logged Data	6.073	SD of logged Data	0.684

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	847.3	95% Adjusted-CLT UCL (Chen-1995)	882.7
		95% Modified-t UCL (Johnson-1978)	861.9

Nonparametric Distribution Free UCLs

95% CLT UCL	789.2	95% Jackknife UCL	847.3
95% Standard Bootstrap UCL	769.9	95% Bootstrap-t UCL	1020
95% Hall's Bootstrap UCL	1792	95% Percentile Bootstrap UCL	789.7
95% BCA Bootstrap UCL	814.3		
90% Chebyshev(Mean, Sd) UCL	1002	95% Chebyshev(Mean, Sd) UCL	1215
97.5% Chebyshev(Mean, Sd) UCL	1511	99% Chebyshev(Mean, Sd) UCL	2093

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	272	Mean	693
Maximum	1560	Median	561.5
SD	492.2	Std. Error of Mean	200.9
Coefficient of Variation	0.71	Skewness	1.256
Mean of logged Data	6.341	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1098	95% Adjusted-CLT UCL (Chen-1995)	1134
		95% Modified-t UCL (Johnson-1978)	1115

Nonparametric Distribution Free UCLs

95% CLT UCL	1024	95% Jackknife UCL	1098
95% Standard Bootstrap UCL	1003	95% Bootstrap-t UCL	1280
95% Hall's Bootstrap UCL	1309	95% Percentile Bootstrap UCL	1020
95% BCA Bootstrap UCL	1065		
90% Chebyshev(Mean, Sd) UCL	1296	95% Chebyshev(Mean, Sd) UCL	1569
97.5% Chebyshev(Mean, Sd) UCL	1948	99% Chebyshev(Mean, Sd) UCL	2692

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	115	Mean	330.8
Maximum	729	Median	279.5
SD	235.1	Std. Error of Mean	95.99
Coefficient of Variation	0.711	Skewness	1.028
Mean of logged Data	5.587	SD of logged Data	0.725

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	524.3	95% Adjusted-CLT UCL (Chen-1995)	531.8
		95% Modified-t UCL (Johnson-1978)	531

Nonparametric Distribution Free UCLs

95% CLT UCL	488.7	95% Jackknife UCL	524.3
95% Standard Bootstrap UCL	474.6	95% Bootstrap-t UCL	671.6
95% Hall's Bootstrap UCL	506.8	95% Percentile Bootstrap UCL	481.2
95% BCA Bootstrap UCL	520		
90% Chebyshev(Mean, Sd) UCL	618.8	95% Chebyshev(Mean, Sd) UCL	749.2
97.5% Chebyshev(Mean, Sd) UCL	930.3	99% Chebyshev(Mean, Sd) UCL	1286

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	94.5	Mean	265.8
Maximum	646	Median	193
SD	213.7	Std. Error of Mean	87.23
Coefficient of Variation	0.804	Skewness	1.355
Mean of logged Data	5.329	SD of logged Data	0.771

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	441.5	95% Adjusted-CLT UCL (Chen-1995)	460.8
		95% Modified-t UCL (Johnson-1978)	449.6

Nonparametric Distribution Free UCLs

95% CLT UCL	409.2	95% Jackknife UCL	441.5
95% Standard Bootstrap UCL	396.1	95% Bootstrap-t UCL	557
95% Hall's Bootstrap UCL	1016	95% Percentile Bootstrap UCL	408.3
95% BCA Bootstrap UCL	439.7		
90% Chebyshev(Mean, Sd) UCL	527.4	95% Chebyshev(Mean, Sd) UCL	646
97.5% Chebyshev(Mean, Sd) UCL	810.5	99% Chebyshev(Mean, Sd) UCL	1134

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	205	Mean	541
Maximum	1310	Median	414
SD	428.1	Std. Error of Mean	174.8
Coefficient of Variation	0.791	Skewness	1.378
Mean of logged Data	6.048	SD of logged Data	0.756

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	893.2	95% Adjusted-CLT UCL (Chen-1995)	933.5
		95% Modified-t UCL (Johnson-1978)	909.6

Nonparametric Distribution Free UCLs

95% CLT UCL	828.5	95% Jackknife UCL	893.2
95% Standard Bootstrap UCL	801.2	95% Bootstrap-t UCL	1100
95% Hall's Bootstrap UCL	1012	95% Percentile Bootstrap UCL	815.5
95% BCA Bootstrap UCL	888.8		
90% Chebyshev(Mean, Sd) UCL	1065	95% Chebyshev(Mean, Sd) UCL	1303
97.5% Chebyshev(Mean, Sd) UCL	1632	99% Chebyshev(Mean, Sd) UCL	2280

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	38.4	Mean	92.45
Maximum	200	Median	77.9
SD	61	Std. Error of Mean	24.9
Coefficient of Variation	0.66	Skewness	1.25
Mean of logged Data	4.356	SD of logged Data	0.634

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	142.6	95% Adjusted-CLT UCL (Chen-1995)	147
		95% Modified-t UCL (Johnson-1978)	144.8

Nonparametric Distribution Free UCLs

95% CLT UCL	133.4	95% Jackknife UCL	142.6
95% Standard Bootstrap UCL	130.8	95% Bootstrap-t UCL	167.8
95% Hall's Bootstrap UCL	152.2	95% Percentile Bootstrap UCL	133.2
95% BCA Bootstrap UCL	143.2		
90% Chebyshev(Mean, Sd) UCL	167.2	95% Chebyshev(Mean, Sd) UCL	201
97.5% Chebyshev(Mean, Sd) UCL	248	99% Chebyshev(Mean, Sd) UCL	340.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	266	Mean	696.5
Maximum	1600	Median	524
SD	535	Std. Error of Mean	218.4
Coefficient of Variation	0.768	Skewness	1.072
Mean of logged Data	6.298	SD of logged Data	0.771

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1137	95% Adjusted-CLT UCL (Chen-1995)	1158
		95% Modified-t UCL (Johnson-1978)	1153

Nonparametric Distribution Free UCLs

95% CLT UCL	1056	95% Jackknife UCL	1137
95% Standard Bootstrap UCL	1014	95% Bootstrap-t UCL	1292
95% Hall's Bootstrap UCL	1119	95% Percentile Bootstrap UCL	1034
95% BCA Bootstrap UCL	1077		
90% Chebyshev(Mean, Sd) UCL	1352	95% Chebyshev(Mean, Sd) UCL	1649
97.5% Chebyshev(Mean, Sd) UCL	2061	99% Chebyshev(Mean, Sd) UCL	2870

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.13	Mean	8.753
Maximum	26.9	Median	5.095
SD	9.343	Std. Error of Mean	3.814
Coefficient of Variation	1.067	Skewness	1.977
Mean of logged Data	1.784	SD of logged Data	0.92

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.44	95% Adjusted-CLT UCL (Chen-1995)	18.32
		95% Modified-t UCL (Johnson-1978)	16.95

Nonparametric Distribution Free UCLs

95% CLT UCL	15.03	95% Jackknife UCL	16.44
95% Standard Bootstrap UCL	14.57	95% Bootstrap-t UCL	31.93
95% Hall's Bootstrap UCL	39.39	95% Percentile Bootstrap UCL	15.42
95% BCA Bootstrap UCL	17.9		
90% Chebyshev(Mean, Sd) UCL	20.2	95% Chebyshev(Mean, Sd) UCL	25.38
97.5% Chebyshev(Mean, Sd) UCL	32.57	99% Chebyshev(Mean, Sd) UCL	46.71

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	159	Mean	396.5
Maximum	856	Median	337.5
SD	263.5	Std. Error of Mean	107.6
Coefficient of Variation	0.665	Skewness	1.181
Mean of logged Data	5.805	SD of logged Data	0.649

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	613.3	95% Adjusted-CLT UCL (Chen-1995)	628.9
		95% Modified-t UCL (Johnson-1978)	621.9

Nonparametric Distribution Free UCLs

95% CLT UCL	573.5	95% Jackknife UCL	613.3
95% Standard Bootstrap UCL	562.7	95% Bootstrap-t UCL	794.1
95% Hall's Bootstrap UCL	690.4	95% Percentile Bootstrap UCL	571.5
95% BCA Bootstrap UCL	610		
90% Chebyshev(Mean, Sd) UCL	719.3	95% Chebyshev(Mean, Sd) UCL	865.5
97.5% Chebyshev(Mean, Sd) UCL	1068	99% Chebyshev(Mean, Sd) UCL	1467

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.2	Mean	33.78
Maximum	120	Median	18.5
SD	42.41	Std. Error of Mean	17.31
Coefficient of Variation	1.255	Skewness	2.404
Mean of logged Data	3.11	SD of logged Data	0.861

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	68.67	95% Adjusted-CLT UCL (Chen-1995)	80.42
		95% Modified-t UCL (Johnson-1978)	71.51

Nonparametric Distribution Free UCLs

95% CLT UCL	62.26	95% Jackknife UCL	68.67
95% Standard Bootstrap UCL	60.01	95% Bootstrap-t UCL	301

95% Hall's Bootstrap UCL	285	95% Percentile Bootstrap UCL	67.62
95% BCA Bootstrap UCL	69.6		
90% Chebyshev(Mean, Sd) UCL	85.73	95% Chebyshev(Mean, Sd) UCL	109.3
97.5% Chebyshev(Mean, Sd) UCL	141.9	99% Chebyshev(Mean, Sd) UCL	206.1

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	109.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	88.8	Mean	288.5
Maximum	734	Median	197.5
SD	250	Std. Error of Mean	102
Coefficient of Variation	0.867	Skewness	1.385
Mean of logged Data	5.366	SD of logged Data	0.839

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	494.1	95% Adjusted-CLT UCL (Chen-1995)	518
		95% Modified-t UCL (Johnson-1978)	503.7

Nonparametric Distribution Free UCLs

95% CLT UCL	456.3	95% Jackknife UCL	494.1
95% Standard Bootstrap UCL	439.4	95% Bootstrap-t UCL	688
95% Hall's Bootstrap UCL	1190	95% Percentile Bootstrap UCL	447.2
95% BCA Bootstrap UCL	493.8		
90% Chebyshev(Mean, Sd) UCL	594.6	95% Chebyshev(Mean, Sd) UCL	733.3
97.5% Chebyshev(Mean, Sd) UCL	925.7	99% Chebyshev(Mean, Sd) UCL	1304

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	274	Mean	720.5
Maximum	1720	Median	524
SD	570.4	Std. Error of Mean	232.9

Coefficient of Variation	0.792	Skewness	1.258
Mean of logged Data	6.328	SD of logged Data	0.77

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1190	95% Adjusted-CLT UCL (Chen-1995)	1231
		95% Modified-t UCL (Johnson-1978)	1210

Nonparametric Distribution Free UCLs

95% CLT UCL	1104	95% Jackknife UCL	1190
95% Standard Bootstrap UCL	1069	95% Bootstrap-t UCL	1401
95% Hall's Bootstrap UCL	2352	95% Percentile Bootstrap UCL	1077
95% BCA Bootstrap UCL	1124		
90% Chebyshev(Mean, Sd) UCL	1419	95% Chebyshev(Mean, Sd) UCL	1736
97.5% Chebyshev(Mean, Sd) UCL	2175	99% Chebyshev(Mean, Sd) UCL	3037

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 11:55:42 AM
From File	21063A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.2	Mean	14.06
Maximum	16.3	Median	14.1
SD	1.392	Std. Error of Mean	0.464
Coefficient of Variation	0.099	Skewness	-0.64
Mean of logged Data	2.638	SD of logged Data	0.103

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.92	95% Adjusted-CLT UCL (Chen-1995)	14.71
		95% Modified-t UCL (Johnson-1978)	14.9

Nonparametric Distribution Free UCLs

95% CLT UCL	14.82	95% Jackknife UCL	14.92
95% Standard Bootstrap UCL	14.79	95% Bootstrap-t UCL	14.84
95% Hall's Bootstrap UCL	14.88	95% Percentile Bootstrap UCL	14.73
95% BCA Bootstrap UCL	14.72		
90% Chebyshev(Mean, Sd) UCL	15.45	95% Chebyshev(Mean, Sd) UCL	16.08
97.5% Chebyshev(Mean, Sd) UCL	16.95	99% Chebyshev(Mean, Sd) UCL	18.67

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.14	Mean	11.05
Maximum	12.6	Median	11.1
SD	1.042	Std. Error of Mean	0.347
Coefficient of Variation	0.0943	Skewness	-0.25

Mean of logged Data	2.398	SD of logged Data	0.096

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.69	95% Adjusted-CLT UCL (Chen-1995)	11.59
		95% Modified-t UCL (Johnson-1978)	11.69

Nonparametric Distribution Free UCLs

95% CLT UCL	11.62	95% Jackknife UCL	11.69
95% Standard Bootstrap UCL	11.61	95% Bootstrap-t UCL	11.7
95% Hall's Bootstrap UCL	11.72	95% Percentile Bootstrap UCL	11.6
95% BCA Bootstrap UCL	11.58		
90% Chebyshev(Mean, Sd) UCL	12.09	95% Chebyshev(Mean, Sd) UCL	12.56
97.5% Chebyshev(Mean, Sd) UCL	13.22	99% Chebyshev(Mean, Sd) UCL	14.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	40.2	Mean	47.22
Maximum	52.4	Median	47.3
SD	3.321	Std. Error of Mean	1.107
Coefficient of Variation	0.0703	Skewness	-0.82
Mean of logged Data	3.853	SD of logged Data	0.0724

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.28	95% Adjusted-CLT UCL (Chen-1995)	48.72
		95% Modified-t UCL (Johnson-1978)	49.23

Nonparametric Distribution Free UCLs

95% CLT UCL	49.04	95% Jackknife UCL	49.28
95% Standard Bootstrap UCL	48.91	95% Bootstrap-t UCL	48.93
95% Hall's Bootstrap UCL	49.01	95% Percentile Bootstrap UCL	48.83
95% BCA Bootstrap UCL	48.69		

90% Chebyshev(Mean, Sd) UCL	50.54	95% Chebyshev(Mean, Sd) UCL	52.05
97.5% Chebyshev(Mean, Sd) UCL	54.13	99% Chebyshev(Mean, Sd) UCL	58.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.1	Mean	1.824
Maximum	2.53	Median	1.88
SD	0.451	Std. Error of Mean	0.15
Coefficient of Variation	0.247	Skewness	-0.021
Mean of logged Data	0.572	SD of logged Data	0.26

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.104	95% Adjusted-CLT UCL (Chen-1995)	2.071
		95% Modified-t UCL (Johnson-1978)	2.104

Nonparametric Distribution Free UCLs

95% CLT UCL	2.072	95% Jackknife UCL	2.104
95% Standard Bootstrap UCL	2.052	95% Bootstrap-t UCL	2.108
95% Hall's Bootstrap UCL	2.094	95% Percentile Bootstrap UCL	2.058
95% BCA Bootstrap UCL	2.043		
90% Chebyshev(Mean, Sd) UCL	2.275	95% Chebyshev(Mean, Sd) UCL	2.48
97.5% Chebyshev(Mean, Sd) UCL	2.763	99% Chebyshev(Mean, Sd) UCL	3.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	0.487	Mean	0.642
Maximum	0.984	Median	0.53
SD	0.178	Std. Error of Mean	0.0595
Coefficient of Variation	0.278	Skewness	1.199
Mean of logged Data	-0.474	SD of logged Data	0.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.752	95% Adjusted-CLT UCL (Chen-1995)	0.765
		95% Modified-t UCL (Johnson-1978)	0.756

Nonparametric Distribution Free UCLs

95% CLT UCL	0.74	95% Jackknife UCL	0.752
95% Standard Bootstrap UCL	0.734	95% Bootstrap-t UCL	0.815
95% Hall's Bootstrap UCL	0.838	95% Percentile Bootstrap UCL	0.743
95% BCA Bootstrap UCL	0.761		
90% Chebyshev(Mean, Sd) UCL	0.82	95% Chebyshev(Mean, Sd) UCL	0.901
97.5% Chebyshev(Mean, Sd) UCL	1.013	99% Chebyshev(Mean, Sd) UCL	1.234

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	2.329
Maximum	3.35	Median	2.12
SD	0.465	Std. Error of Mean	0.155
Coefficient of Variation	0.2	Skewness	1.838
Mean of logged Data	0.83	SD of logged Data	0.178

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.618	95% Adjusted-CLT UCL (Chen-1995)	2.686
		95% Modified-t UCL (Johnson-1978)	2.633

Nonparametric Distribution Free UCLs

95% CLT UCL	2.584	95% Jackknife UCL	2.618
95% Standard Bootstrap UCL	2.565	95% Bootstrap-t UCL	4.626

95% Hall's Bootstrap UCL	5.354	95% Percentile Bootstrap UCL	2.583
95% BCA Bootstrap UCL	2.652		
90% Chebyshev(Mean, Sd) UCL	2.794	95% Chebyshev(Mean, Sd) UCL	3.005
97.5% Chebyshev(Mean, Sd) UCL	3.297	99% Chebyshev(Mean, Sd) UCL	3.871

Suggested UCL to Use

95% Student's-t UCL	2.618	or 95% Modified-t UCL	2.633

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	9.132
Maximum	20.8	Median	7.76
SD	6.828	Std. Error of Mean	2.276
Coefficient of Variation	0.748	Skewness	0.614
Mean of logged Data	1.89	SD of logged Data	0.918

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.36	95% Adjusted-CLT UCL (Chen-1995)	13.37
		95% Modified-t UCL (Johnson-1978)	13.44

Nonparametric Distribution Free UCLs

95% CLT UCL	12.88	95% Jackknife UCL	13.36
95% Standard Bootstrap UCL	12.69	95% Bootstrap-t UCL	14.51
95% Hall's Bootstrap UCL	14.96	95% Percentile Bootstrap UCL	12.76
95% BCA Bootstrap UCL	13.08		
90% Chebyshev(Mean, Sd) UCL	15.96	95% Chebyshev(Mean, Sd) UCL	19.05
97.5% Chebyshev(Mean, Sd) UCL	23.34	99% Chebyshev(Mean, Sd) UCL	31.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	12.18
Maximum	27	Median	11.7
SD	9.025	Std. Error of Mean	3.008

Coefficient of Variation	0.741	Skewness	0.3
Mean of logged Data	2.113	SD of logged Data	1.056

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.77	95% Adjusted-CLT UCL (Chen-1995)	17.44
		95% Modified-t UCL (Johnson-1978)	17.82

Nonparametric Distribution Free UCLs

95% CLT UCL	17.12	95% Jackknife UCL	17.77
95% Standard Bootstrap UCL	16.64	95% Bootstrap-t UCL	18.22
95% Hall's Bootstrap UCL	17.78	95% Percentile Bootstrap UCL	16.82
95% BCA Bootstrap UCL	16.81		
90% Chebyshev(Mean, Sd) UCL	21.2	95% Chebyshev(Mean, Sd) UCL	25.29
97.5% Chebyshev(Mean, Sd) UCL	30.96	99% Chebyshev(Mean, Sd) UCL	42.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	17.68
Maximum	47.9	Median	16
SD	14.63	Std. Error of Mean	4.876
Coefficient of Variation	0.827	Skewness	1.04
Mean of logged Data	2.478	SD of logged Data	1.032

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.75	95% Adjusted-CLT UCL (Chen-1995)	27.51
		95% Modified-t UCL (Johnson-1978)	27.03

Nonparametric Distribution Free UCLs

95% CLT UCL	25.7	95% Jackknife UCL	26.75
95% Standard Bootstrap UCL	25.14	95% Bootstrap-t UCL	29.09
95% Hall's Bootstrap UCL	34.29	95% Percentile Bootstrap UCL	25.36
95% BCA Bootstrap UCL	27.15		
90% Chebyshev(Mean, Sd) UCL	32.31	95% Chebyshev(Mean, Sd) UCL	38.93
97.5% Chebyshev(Mean, Sd) UCL	48.13	99% Chebyshev(Mean, Sd) UCL	66.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	9.306
Maximum	18.5	Median	9.15
SD	5.619	Std. Error of Mean	1.873
Coefficient of Variation	0.604	Skewness	0.437
Mean of logged Data	2.038	SD of logged Data	0.692

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.79	95% Adjusted-CLT UCL (Chen-1995)	12.68
		95% Modified-t UCL (Johnson-1978)	12.83

Nonparametric Distribution Free UCLs

95% CLT UCL	12.39	95% Jackknife UCL	12.79
95% Standard Bootstrap UCL	12.15	95% Bootstrap-t UCL	13.22
95% Hall's Bootstrap UCL	13.03	95% Percentile Bootstrap UCL	12.26
95% BCA Bootstrap UCL	12.49		
90% Chebyshev(Mean, Sd) UCL	14.92	95% Chebyshev(Mean, Sd) UCL	17.47
97.5% Chebyshev(Mean, Sd) UCL	21	99% Chebyshev(Mean, Sd) UCL	27.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	7.099
Maximum	18.2	Median	6.29
SD	5.253	Std. Error of Mean	1.751
Coefficient of Variation	0.74	Skewness	1.2
Mean of logged Data	1.702	SD of logged Data	0.788

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.36	95% Adjusted-CLT UCL (Chen-1995)	10.73
		95% Modified-t UCL (Johnson-1978)	10.47

Nonparametric Distribution Free UCLs

95% CLT UCL	9.98	95% Jackknife UCL	10.36
95% Standard Bootstrap UCL	9.863	95% Bootstrap-t UCL	11.56
95% Hall's Bootstrap UCL	23.54	95% Percentile Bootstrap UCL	9.863
95% BCA Bootstrap UCL	10.54		
90% Chebyshev(Mean, Sd) UCL	12.35	95% Chebyshev(Mean, Sd) UCL	14.73
97.5% Chebyshev(Mean, Sd) UCL	18.03	99% Chebyshev(Mean, Sd) UCL	24.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	14.84
Maximum	52.2	Median	12.3
SD	15.65	Std. Error of Mean	5.215
Coefficient of Variation	1.055	Skewness	1.938
Mean of logged Data	2.176	SD of logged Data	1.162

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.53	95% Adjusted-CLT UCL (Chen-1995)	27.01
		95% Modified-t UCL (Johnson-1978)	25.1

Nonparametric Distribution Free UCLs

95% CLT UCL	23.41	95% Jackknife UCL	24.53
95% Standard Bootstrap UCL	22.9	95% Bootstrap-t UCL	32.68
95% Hall's Bootstrap UCL	63.5	95% Percentile Bootstrap UCL	23.8
95% BCA Bootstrap UCL	26.88		
90% Chebyshev(Mean, Sd) UCL	30.48	95% Chebyshev(Mean, Sd) UCL	37.57
97.5% Chebyshev(Mean, Sd) UCL	47.4	99% Chebyshev(Mean, Sd) UCL	66.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.42	Mean	3.387
Maximum	4.77	Median	3.265
SD	0.714	Std. Error of Mean	0.238
Coefficient of Variation	0.211	Skewness	0.742
Mean of logged Data	1.201	SD of logged Data	0.206

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.829	95% Adjusted-CLT UCL (Chen-1995)	3.841
		95% Modified-t UCL (Johnson-1978)	3.839

Nonparametric Distribution Free UCLs

95% CLT UCL	3.778	95% Jackknife UCL	3.829
95% Standard Bootstrap UCL	3.754	95% Bootstrap-t UCL	3.938
95% Hall's Bootstrap UCL	4.586	95% Percentile Bootstrap UCL	3.794
95% BCA Bootstrap UCL	3.816		
90% Chebyshev(Mean, Sd) UCL	4.1	95% Chebyshev(Mean, Sd) UCL	4.424
97.5% Chebyshev(Mean, Sd) UCL	4.872	99% Chebyshev(Mean, Sd) UCL	5.754

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	20.73
Maximum	81.3	Median	14.7
SD	24.87	Std. Error of Mean	8.289
Coefficient of Variation	1.2	Skewness	2.126
Mean of logged Data	2.367	SD of logged Data	1.326

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.14	95% Adjusted-CLT UCL (Chen-1995)	40.64
		95% Modified-t UCL (Johnson-1978)	37.12

Nonparametric Distribution Free UCLs

95% CLT UCL	34.37	95% Jackknife UCL	36.14
95% Standard Bootstrap UCL	33.65	95% Bootstrap-t UCL	53.24
95% Hall's Bootstrap UCL	97.36	95% Percentile Bootstrap UCL	35.42
95% BCA Bootstrap UCL	41.38		
90% Chebyshev(Mean, Sd) UCL	45.6	95% Chebyshev(Mean, Sd) UCL	56.86
97.5% Chebyshev(Mean, Sd) UCL	72.5	99% Chebyshev(Mean, Sd) UCL	103.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.981	Mean	1.259
Maximum	1.33	Median	1.29
SD	0.108	Std. Error of Mean	0.0359
Coefficient of Variation	0.0854	Skewness	-2.673
Mean of logged Data	0.227	SD of logged Data	0.0945

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.326	95% Adjusted-CLT UCL (Chen-1995)	1.284
		95% Modified-t UCL (Johnson-1978)	1.32

Nonparametric Distribution Free UCLs

95% CLT UCL	1.318	95% Jackknife UCL	1.326
95% Standard Bootstrap UCL	1.314	95% Bootstrap-t UCL	1.305
95% Hall's Bootstrap UCL	1.296	95% Percentile Bootstrap UCL	1.303
95% BCA Bootstrap UCL	1.297		
90% Chebyshev(Mean, Sd) UCL	1.367	95% Chebyshev(Mean, Sd) UCL	1.415
97.5% Chebyshev(Mean, Sd) UCL	1.483	99% Chebyshev(Mean, Sd) UCL	1.616

Suggested UCL to Use

95% Student's-t UCL	1.326	or 95% Modified-t UCL	1.32

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	9.713
Maximum	21	Median	8.76
SD	6.222	Std. Error of Mean	2.074
Coefficient of Variation	0.641	Skewness	0.666
Mean of logged Data	2.064	SD of logged Data	0.718

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.57	95% Adjusted-CLT UCL (Chen-1995)	13.62
		95% Modified-t UCL (Johnson-1978)	13.65

Nonparametric Distribution Free UCLs

95% CLT UCL	13.12	95% Jackknife UCL	13.57
95% Standard Bootstrap UCL	12.87	95% Bootstrap-t UCL	14.45
95% Hall's Bootstrap UCL	15.32	95% Percentile Bootstrap UCL	13.06
95% BCA Bootstrap UCL	13.38		
90% Chebyshev(Mean, Sd) UCL	15.94	95% Chebyshev(Mean, Sd) UCL	18.75
97.5% Chebyshev(Mean, Sd) UCL	22.67	99% Chebyshev(Mean, Sd) UCL	30.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.32	Mean	3.18
Maximum	4.44	Median	3.21
SD	0.754	Std. Error of Mean	0.251
Coefficient of Variation	0.237	Skewness	0.346
Mean of logged Data	1.132	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.647	95% Adjusted-CLT UCL (Chen-1995)	3.624
		95% Modified-t UCL (Johnson-1978)	3.652

Nonparametric Distribution Free UCLs

95% CLT UCL	3.594	95% Jackknife UCL	3.647
95% Standard Bootstrap UCL	3.565	95% Bootstrap-t UCL	3.705
95% Hall's Bootstrap UCL	3.592	95% Percentile Bootstrap UCL	3.599
95% BCA Bootstrap UCL	3.581		
90% Chebyshev(Mean, Sd) UCL	3.934	95% Chebyshev(Mean, Sd) UCL	4.276
97.5% Chebyshev(Mean, Sd) UCL	4.75	99% Chebyshev(Mean, Sd) UCL	5.681

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	8.546
Maximum	24.8	Median	5.45
SD	7.183	Std. Error of Mean	2.394
Coefficient of Variation	0.841	Skewness	1.746
Mean of logged Data	1.892	SD of logged Data	0.721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13	95% Adjusted-CLT UCL (Chen-1995)	13.97
		95% Modified-t UCL (Johnson-1978)	13.23

Nonparametric Distribution Free UCLs

95% CLT UCL	12.48	95% Jackknife UCL	13
95% Standard Bootstrap UCL	12.17	95% Bootstrap-t UCL	18.58
95% Hall's Bootstrap UCL	29.93	95% Percentile Bootstrap UCL	12.8
95% BCA Bootstrap UCL	13.45		
90% Chebyshev(Mean, Sd) UCL	15.73	95% Chebyshev(Mean, Sd) UCL	18.98
97.5% Chebyshev(Mean, Sd) UCL	23.5	99% Chebyshev(Mean, Sd) UCL	32.37

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	19.19
Maximum	69.1	Median	14.3
SD	20.69	Std. Error of Mean	6.898
Coefficient of Variation	1.078	Skewness	2.044
Mean of logged Data	2.468	SD of logged Data	1.083

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.02	95% Adjusted-CLT UCL (Chen-1995)	35.56
		95% Modified-t UCL (Johnson-1978)	32.8

Nonparametric Distribution Free UCLs

95% CLT UCL	30.54	95% Jackknife UCL	32.02
95% Standard Bootstrap UCL	29.84	95% Bootstrap-t UCL	42.77
95% Hall's Bootstrap UCL	83.79	95% Percentile Bootstrap UCL	30.81
95% BCA Bootstrap UCL	37.29		
90% Chebyshev(Mean, Sd) UCL	39.88	95% Chebyshev(Mean, Sd) UCL	49.26
97.5% Chebyshev(Mean, Sd) UCL	62.27	99% Chebyshev(Mean, Sd) UCL	87.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 1:27:59 PM
From File	21063B_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	14.1	Mean	15.04
Maximum	15.9	Median	15.1
SD	0.503	Std. Error of Mean	0.168
Coefficient of Variation	0.0334	Skewness	-0.322
Mean of logged Data	2.711	SD of logged Data	0.0336

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.36	95% Adjusted-CLT UCL (Chen-1995)	15.3
		95% Modified-t UCL (Johnson-1978)	15.35

Nonparametric Distribution Free UCLs

95% CLT UCL	15.32	95% Jackknife UCL	15.36
95% Standard Bootstrap UCL	15.31	95% Bootstrap-t UCL	15.33
95% Hall's Bootstrap UCL	15.34	95% Percentile Bootstrap UCL	15.3
95% BCA Bootstrap UCL	15.27		
90% Chebyshev(Mean, Sd) UCL	15.55	95% Chebyshev(Mean, Sd) UCL	15.77
97.5% Chebyshev(Mean, Sd) UCL	16.09	99% Chebyshev(Mean, Sd) UCL	16.71

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11	Mean	13.09
Maximum	16.5	Median	12.5
SD	1.928	Std. Error of Mean	0.643
Coefficient of Variation	0.147	Skewness	0.746

Mean of logged Data	2.563	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.28	95% Adjusted-CLT UCL (Chen-1995)	14.32
		95% Modified-t UCL (Johnson-1978)	14.31

Nonparametric Distribution Free UCLs

95% CLT UCL	14.15	95% Jackknife UCL	14.28
95% Standard Bootstrap UCL	14.08	95% Bootstrap-t UCL	14.68
95% Hall's Bootstrap UCL	14.16	95% Percentile Bootstrap UCL	14.09
95% BCA Bootstrap UCL	14.2		
90% Chebyshev(Mean, Sd) UCL	15.02	95% Chebyshev(Mean, Sd) UCL	15.89
97.5% Chebyshev(Mean, Sd) UCL	17.1	99% Chebyshev(Mean, Sd) UCL	19.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	49.1	Mean	53.47
Maximum	56	Median	53.7
SD	2.165	Std. Error of Mean	0.722
Coefficient of Variation	0.0405	Skewness	-0.909
Mean of logged Data	3.978	SD of logged Data	0.0411

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.81	95% Adjusted-CLT UCL (Chen-1995)	54.42
		95% Modified-t UCL (Johnson-1978)	54.77

Nonparametric Distribution Free UCLs

95% CLT UCL	54.65	95% Jackknife UCL	54.81
95% Standard Bootstrap UCL	54.61	95% Bootstrap-t UCL	54.63
95% Hall's Bootstrap UCL	54.49	95% Percentile Bootstrap UCL	54.57
95% BCA Bootstrap UCL	54.47		
90% Chebyshev(Mean, Sd) UCL	55.63	95% Chebyshev(Mean, Sd) UCL	56.61
97.5% Chebyshev(Mean, Sd) UCL	57.97	99% Chebyshev(Mean, Sd) UCL	60.65

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.4	Mean	2.657
Maximum	3.995	Median	2.26
SD	1.089	Std. Error of Mean	0.363
Coefficient of Variation	0.41	Skewness	0.331
Mean of logged Data	0.9	SD of logged Data	0.419

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.332	95% Adjusted-CLT UCL (Chen-1995)	3.297
		95% Modified-t UCL (Johnson-1978)	3.338

Nonparametric Distribution Free UCLs

95% CLT UCL	3.254	95% Jackknife UCL	3.332
95% Standard Bootstrap UCL	3.216	95% Bootstrap-t UCL	3.363
95% Hall's Bootstrap UCL	3.117	95% Percentile Bootstrap UCL	3.244
95% BCA Bootstrap UCL	3.244		
90% Chebyshev(Mean, Sd) UCL	3.746	95% Chebyshev(Mean, Sd) UCL	4.239
97.5% Chebyshev(Mean, Sd) UCL	4.924	99% Chebyshev(Mean, Sd) UCL	6.269

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.397	Mean	1.063
Maximum	2.135	Median	0.53
SD	0.802	Std. Error of Mean	0.267
Coefficient of Variation	0.755	Skewness	0.791
Mean of logged Data	-0.184	SD of logged Data	0.728

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.561	95% Adjusted-CLT UCL (Chen-1995)	1.579
		95% Modified-t UCL (Johnson-1978)	1.573

Nonparametric Distribution Free UCLs

95% CLT UCL	1.503	95% Jackknife UCL	1.561
95% Standard Bootstrap UCL	1.482	95% Bootstrap-t UCL	1.613
95% Hall's Bootstrap UCL	1.336	95% Percentile Bootstrap UCL	1.463
95% BCA Bootstrap UCL	1.587		
90% Chebyshev(Mean, Sd) UCL	1.866	95% Chebyshev(Mean, Sd) UCL	2.229
97.5% Chebyshev(Mean, Sd) UCL	2.734	99% Chebyshev(Mean, Sd) UCL	3.725

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.229

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.49	Mean	4.135
Maximum	8.65	Median	2.15
SD	3.076	Std. Error of Mean	1.025
Coefficient of Variation	0.744	Skewness	0.842
Mean of logged Data	1.181	SD of logged Data	0.718

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.042	95% Adjusted-CLT UCL (Chen-1995)	6.129
		95% Modified-t UCL (Johnson-1978)	6.09

Nonparametric Distribution Free UCLs

95% CLT UCL	5.822	95% Jackknife UCL	6.042
95% Standard Bootstrap UCL	5.745	95% Bootstrap-t UCL	6.588
95% Hall's Bootstrap UCL	5.376	95% Percentile Bootstrap UCL	5.706
95% BCA Bootstrap UCL	6.058		
90% Chebyshev(Mean, Sd) UCL	7.211	95% Chebyshev(Mean, Sd) UCL	8.604
97.5% Chebyshev(Mean, Sd) UCL	10.54	99% Chebyshev(Mean, Sd) UCL	14.34

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.82	Mean	14.83
Maximum	33.9	Median	12.1
SD	12.11	Std. Error of Mean	4.037
Coefficient of Variation	0.817	Skewness	0.384
Mean of logged Data	2.212	SD of logged Data	1.194

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.34	95% Adjusted-CLT UCL (Chen-1995)	22.02
		95% Modified-t UCL (Johnson-1978)	22.42

Nonparametric Distribution Free UCLs

95% CLT UCL	21.47	95% Jackknife UCL	22.34
95% Standard Bootstrap UCL	21.05	95% Bootstrap-t UCL	23.31
95% Hall's Bootstrap UCL	21.89	95% Percentile Bootstrap UCL	21.47
95% BCA Bootstrap UCL	21.57		
90% Chebyshev(Mean, Sd) UCL	26.94	95% Chebyshev(Mean, Sd) UCL	32.43
97.5% Chebyshev(Mean, Sd) UCL	40.04	99% Chebyshev(Mean, Sd) UCL	55

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.61	Mean	18.82
Maximum	39.5	Median	16.5
SD	15.64	Std. Error of Mean	5.214
Coefficient of Variation	0.831	Skewness	0.213
Mean of logged Data	2.363	SD of logged Data	1.337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.51	95% Adjusted-CLT UCL (Chen-1995)	27.79
		95% Modified-t UCL (Johnson-1978)	28.57

Nonparametric Distribution Free UCLs

95% CLT UCL	27.39	95% Jackknife UCL	28.51
95% Standard Bootstrap UCL	26.81	95% Bootstrap-t UCL	29.45
95% Hall's Bootstrap UCL	25.92	95% Percentile Bootstrap UCL	26.92
95% BCA Bootstrap UCL	27.26		
90% Chebyshev(Mean, Sd) UCL	34.46	95% Chebyshev(Mean, Sd) UCL	41.54
97.5% Chebyshev(Mean, Sd) UCL	51.38	99% Chebyshev(Mean, Sd) UCL	70.69

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.86	Mean	27.2
Maximum	57.6	Median	24.5
SD	21.89	Std. Error of Mean	7.295
Coefficient of Variation	0.805	Skewness	0.128
Mean of logged Data	2.772	SD of logged Data	1.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.76	95% Adjusted-CLT UCL (Chen-1995)	39.53
		95% Modified-t UCL (Johnson-1978)	40.81

Nonparametric Distribution Free UCLs

95% CLT UCL	39.2	95% Jackknife UCL	40.76
95% Standard Bootstrap UCL	38.59	95% Bootstrap-t UCL	40.51
95% Hall's Bootstrap UCL	37.34	95% Percentile Bootstrap UCL	38.76
95% BCA Bootstrap UCL	38.39		
90% Chebyshev(Mean, Sd) UCL	49.08	95% Chebyshev(Mean, Sd) UCL	59
97.5% Chebyshev(Mean, Sd) UCL	72.76	99% Chebyshev(Mean, Sd) UCL	99.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	21.88
Maximum	46.2	Median	20
SD	17.73	Std. Error of Mean	5.911
Coefficient of Variation	0.81	Skewness	0.219
Mean of logged Data	2.615	SD of logged Data	1.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.87	95% Adjusted-CLT UCL (Chen-1995)	32.06
		95% Modified-t UCL (Johnson-1978)	32.94

Nonparametric Distribution Free UCLs

95% CLT UCL	31.6	95% Jackknife UCL	32.87
95% Standard Bootstrap UCL	30.98	95% Bootstrap-t UCL	33.5
95% Hall's Bootstrap UCL	29.88	95% Percentile Bootstrap UCL	31.1
95% BCA Bootstrap UCL	31.82		
90% Chebyshev(Mean, Sd) UCL	39.61	95% Chebyshev(Mean, Sd) UCL	47.65
97.5% Chebyshev(Mean, Sd) UCL	58.8	99% Chebyshev(Mean, Sd) UCL	80.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.085	Mean	11.62
Maximum	24.4	Median	9.02
SD	9.172	Std. Error of Mean	3.057
Coefficient of Variation	0.79	Skewness	0.387
Mean of logged Data	2.051	SD of logged Data	1.048

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.3	95% Adjusted-CLT UCL (Chen-1995)	17.07
		95% Modified-t UCL (Johnson-1978)	17.37

Nonparametric Distribution Free UCLs

95% CLT UCL	16.64	95% Jackknife UCL	17.3
95% Standard Bootstrap UCL	16.49	95% Bootstrap-t UCL	17.48
95% Hall's Bootstrap UCL	16.18	95% Percentile Bootstrap UCL	16.47
95% BCA Bootstrap UCL	17.03		
90% Chebyshev(Mean, Sd) UCL	20.79	95% Chebyshev(Mean, Sd) UCL	24.94
97.5% Chebyshev(Mean, Sd) UCL	30.71	99% Chebyshev(Mean, Sd) UCL	42.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.085	Mean	22.2
Maximum	47	Median	18.4
SD	18.16	Std. Error of Mean	6.054
Coefficient of Variation	0.818	Skewness	0.18
Mean of logged Data	2.533	SD of logged Data	1.338

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.46	95% Adjusted-CLT UCL (Chen-1995)	32.55
		95% Modified-t UCL (Johnson-1978)	33.52

Nonparametric Distribution Free UCLs

95% CLT UCL	32.16	95% Jackknife UCL	33.46
95% Standard Bootstrap UCL	31.56	95% Bootstrap-t UCL	35.03
95% Hall's Bootstrap UCL	30.95	95% Percentile Bootstrap UCL	31.8
95% BCA Bootstrap UCL	31.9		
90% Chebyshev(Mean, Sd) UCL	40.36	95% Chebyshev(Mean, Sd) UCL	48.59
97.5% Chebyshev(Mean, Sd) UCL	60.01	99% Chebyshev(Mean, Sd) UCL	82.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	7.361
Maximum	13.35	Median	4.48
SD	4.771	Std. Error of Mean	1.59
Coefficient of Variation	0.648	Skewness	0.48
Mean of logged Data	1.798	SD of logged Data	0.671

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.32	95% Adjusted-CLT UCL (Chen-1995)	10.25
		95% Modified-t UCL (Johnson-1978)	10.36

Nonparametric Distribution Free UCLs

95% CLT UCL	9.977	95% Jackknife UCL	10.32
95% Standard Bootstrap UCL	9.816	95% Bootstrap-t UCL	10.88
95% Hall's Bootstrap UCL	9.266	95% Percentile Bootstrap UCL	9.943
95% BCA Bootstrap UCL	10.07		
90% Chebyshev(Mean, Sd) UCL	12.13	95% Chebyshev(Mean, Sd) UCL	14.29
97.5% Chebyshev(Mean, Sd) UCL	17.29	99% Chebyshev(Mean, Sd) UCL	23.19

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.085	Mean	25.01
Maximum	62.6	Median	23.4
SD	21.88	Std. Error of Mean	7.293
Coefficient of Variation	0.875	Skewness	0.509
Mean of logged Data	2.586	SD of logged Data	1.424

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	38.57	95% Adjusted-CLT UCL (Chen-1995)	38.33
		95% Modified-t UCL (Johnson-1978)	38.78

Nonparametric Distribution Free UCLs

95% CLT UCL	37	95% Jackknife UCL	38.57
95% Standard Bootstrap UCL	36.32	95% Bootstrap-t UCL	40.64
95% Hall's Bootstrap UCL	37.32	95% Percentile Bootstrap UCL	36.69
95% BCA Bootstrap UCL	37.04		
90% Chebyshev(Mean, Sd) UCL	46.89	95% Chebyshev(Mean, Sd) UCL	56.8
97.5% Chebyshev(Mean, Sd) UCL	70.55	99% Chebyshev(Mean, Sd) UCL	97.57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.215	Mean	2.632
Maximum	5.35	Median	1.32
SD	2.014	Std. Error of Mean	0.671
Coefficient of Variation	0.765	Skewness	0.857
Mean of logged Data	0.726	SD of logged Data	0.709

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.88	95% Adjusted-CLT UCL (Chen-1995)	3.941
		95% Modified-t UCL (Johnson-1978)	3.912

Nonparametric Distribution Free UCLs

95% CLT UCL	3.736	95% Jackknife UCL	3.88
95% Standard Bootstrap UCL	3.687	95% Bootstrap-t UCL	4.001
95% Hall's Bootstrap UCL	3.256	95% Percentile Bootstrap UCL	3.544
95% BCA Bootstrap UCL	3.945		
90% Chebyshev(Mean, Sd) UCL	4.646	95% Chebyshev(Mean, Sd) UCL	5.558
97.5% Chebyshev(Mean, Sd) UCL	6.824	99% Chebyshev(Mean, Sd) UCL	9.311

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	5.558

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	19.36
Maximum	41.1	Median	17.8
SD	15.51	Std. Error of Mean	5.169
Coefficient of Variation	0.801	Skewness	0.31
Mean of logged Data	2.532	SD of logged Data	1.094

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.97	95% Adjusted-CLT UCL (Chen-1995)	28.43
		95% Modified-t UCL (Johnson-1978)	29.06

Nonparametric Distribution Free UCLs

95% CLT UCL	27.86	95% Jackknife UCL	28.97
95% Standard Bootstrap UCL	27.26	95% Bootstrap-t UCL	29.4
95% Hall's Bootstrap UCL	26.39	95% Percentile Bootstrap UCL	27.87
95% BCA Bootstrap UCL	27.22		
90% Chebyshev(Mean, Sd) UCL	34.86	95% Chebyshev(Mean, Sd) UCL	41.89
97.5% Chebyshev(Mean, Sd) UCL	51.64	99% Chebyshev(Mean, Sd) UCL	70.79

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.7	Mean	3.802
Maximum	4.77	Median	3.71
SD	0.66	Std. Error of Mean	0.22
Coefficient of Variation	0.174	Skewness	0.0206
Mean of logged Data	1.322	SD of logged Data	0.178

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.212	95% Adjusted-CLT UCL (Chen-1995)	4.166
		95% Modified-t UCL (Johnson-1978)	4.212

Nonparametric Distribution Free UCLs

95% CLT UCL	4.164	95% Jackknife UCL	4.212
95% Standard Bootstrap UCL	4.143	95% Bootstrap-t UCL	4.236
95% Hall's Bootstrap UCL	4.308	95% Percentile Bootstrap UCL	4.152
95% BCA Bootstrap UCL	4.135		
90% Chebyshev(Mean, Sd) UCL	4.463	95% Chebyshev(Mean, Sd) UCL	4.762
97.5% Chebyshev(Mean, Sd) UCL	5.177	99% Chebyshev(Mean, Sd) UCL	5.992

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	13.92
Maximum	39.4	Median	11.1
SD	11.8	Std. Error of Mean	3.933
Coefficient of Variation	0.848	Skewness	1.324
Mean of logged Data	2.288	SD of logged Data	0.922

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.23	95% Adjusted-CLT UCL (Chen-1995)	22.25
		95% Modified-t UCL (Johnson-1978)	21.52

Nonparametric Distribution Free UCLs

95% CLT UCL	20.39	95% Jackknife UCL	21.23
95% Standard Bootstrap UCL	19.73	95% Bootstrap-t UCL	24.66
95% Hall's Bootstrap UCL	27.73	95% Percentile Bootstrap UCL	20.1
95% BCA Bootstrap UCL	21.68		
90% Chebyshev(Mean, Sd) UCL	25.72	95% Chebyshev(Mean, Sd) UCL	31.07
97.5% Chebyshev(Mean, Sd) UCL	38.48	99% Chebyshev(Mean, Sd) UCL	53.06

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	3.205	Mean	24.33
Maximum	54.5	Median	22.5
SD	18.98	Std. Error of Mean	6.326
Coefficient of Variation	0.78	Skewness	0.405
Mean of logged Data	2.775	SD of logged Data	1.097

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.09	95% Adjusted-CLT UCL (Chen-1995)	35.64
		95% Modified-t UCL (Johnson-1978)	36.23

Nonparametric Distribution Free UCLs

95% CLT UCL	34.73	95% Jackknife UCL	36.09
95% Standard Bootstrap UCL	33.69	95% Bootstrap-t UCL	36.73
95% Hall's Bootstrap UCL	33.92	95% Percentile Bootstrap UCL	34.49
95% BCA Bootstrap UCL	34.57		
90% Chebyshev(Mean, Sd) UCL	43.3	95% Chebyshev(Mean, Sd) UCL	51.9
97.5% Chebyshev(Mean, Sd) UCL	63.83	99% Chebyshev(Mean, Sd) UCL	87.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:11:21 PM
From File	21063C_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.65	Mean	13.17
Maximum	15.8	Median	12.05
SD	1.703	Std. Error of Mean	0.568
Coefficient of Variation	0.129	Skewness	0.612
Mean of logged Data	2.571	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.23	95% Adjusted-CLT UCL (Chen-1995)	14.23
		95% Modified-t UCL (Johnson-1978)	14.25

Nonparametric Distribution Free UCLs

95% CLT UCL	14.11	95% Jackknife UCL	14.23
95% Standard Bootstrap UCL	14.06	95% Bootstrap-t UCL	14.39
95% Hall's Bootstrap UCL	13.91	95% Percentile Bootstrap UCL	14.08
95% BCA Bootstrap UCL	14.19		
90% Chebyshev(Mean, Sd) UCL	14.88	95% Chebyshev(Mean, Sd) UCL	15.65
97.5% Chebyshev(Mean, Sd) UCL	16.72	99% Chebyshev(Mean, Sd) UCL	18.82

Suggested UCL to Use

95% Student's-t UCL	14.23	or 95% Modified-t UCL	14.25

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.7	Mean	20.94
Maximum	77.1	Median	14.2
SD	21.11	Std. Error of Mean	7.036
Coefficient of Variation	1.008	Skewness	2.973
Mean of logged Data	2.819	SD of logged Data	0.582

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.03	95% Adjusted-CLT UCL (Chen-1995)	39.97
		95% Modified-t UCL (Johnson-1978)	35.19

Nonparametric Distribution Free UCLs

95% CLT UCL	32.52	95% Jackknife UCL	34.03
95% Standard Bootstrap UCL	31.59	95% Bootstrap-t UCL	163.4
95% Hall's Bootstrap UCL	120.6	95% Percentile Bootstrap UCL	34.8
95% BCA Bootstrap UCL	41.44		
90% Chebyshev(Mean, Sd) UCL	42.05	95% Chebyshev(Mean, Sd) UCL	51.61
97.5% Chebyshev(Mean, Sd) UCL	64.89	99% Chebyshev(Mean, Sd) UCL	90.95

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	51.61

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	46.6	Mean	61.52
Maximum	73.3	Median	66.5
SD	10.86	Std. Error of Mean	3.619
Coefficient of Variation	0.176	Skewness	-0.233
Mean of logged Data	4.105	SD of logged Data	0.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	68.25	95% Adjusted-CLT UCL (Chen-1995)	67.17
		95% Modified-t UCL (Johnson-1978)	68.2

Nonparametric Distribution Free UCLs

95% CLT UCL	67.47	95% Jackknife UCL	68.25
95% Standard Bootstrap UCL	67.22	95% Bootstrap-t UCL	68.43
95% Hall's Bootstrap UCL	66.18	95% Percentile Bootstrap UCL	67.03
95% BCA Bootstrap UCL	66.76		
90% Chebyshev(Mean, Sd) UCL	72.38	95% Chebyshev(Mean, Sd) UCL	77.3
97.5% Chebyshev(Mean, Sd) UCL	84.12	99% Chebyshev(Mean, Sd) UCL	97.53

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.679	Mean	0.916
Maximum	1	Median	0.975
SD	0.129	Std. Error of Mean	0.043
Coefficient of Variation	0.141	Skewness	-1.599
Mean of logged Data	-0.0975	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.996	95% Adjusted-CLT UCL (Chen-1995)	0.963
		95% Modified-t UCL (Johnson-1978)	0.992

Nonparametric Distribution Free UCLs

95% CLT UCL	0.987	95% Jackknife UCL	0.996
95% Standard Bootstrap UCL	0.986	95% Bootstrap-t UCL	0.973
95% Hall's Bootstrap UCL	0.963	95% Percentile Bootstrap UCL	0.981
95% BCA Bootstrap UCL	0.977		
90% Chebyshev(Mean, Sd) UCL	1.045	95% Chebyshev(Mean, Sd) UCL	1.104
97.5% Chebyshev(Mean, Sd) UCL	1.185	99% Chebyshev(Mean, Sd) UCL	1.344

Suggested UCL to Use

95% Student's-t UCL	0.996	or 95% Modified-t UCL	0.992

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.477	Mean	0.616
Maximum	0.847	Median	0.53
SD	0.131	Std. Error of Mean	0.0435
Coefficient of Variation	0.212	Skewness	0.702
Mean of logged Data	-0.504	SD of logged Data	0.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.696	95% Adjusted-CLT UCL (Chen-1995)	0.698
		95% Modified-t UCL (Johnson-1978)	0.698

Nonparametric Distribution Free UCLs

95% CLT UCL	0.687	95% Jackknife UCL	0.696
95% Standard Bootstrap UCL	0.682	95% Bootstrap-t UCL	0.714
95% Hall's Bootstrap UCL	0.682	95% Percentile Bootstrap UCL	0.684
95% BCA Bootstrap UCL	0.69		
90% Chebyshev(Mean, Sd) UCL	0.746	95% Chebyshev(Mean, Sd) UCL	0.805
97.5% Chebyshev(Mean, Sd) UCL	0.887	99% Chebyshev(Mean, Sd) UCL	1.048

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.5	Mean	2.016
Maximum	2.3	Median	2.1
SD	0.237	Std. Error of Mean	0.0791
Coefficient of Variation	0.118	Skewness	-1.411
Mean of logged Data	0.694	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.163	95% Adjusted-CLT UCL (Chen-1995)	2.107
		95% Modified-t UCL (Johnson-1978)	2.157

Nonparametric Distribution Free UCLs

95% CLT UCL	2.146	95% Jackknife UCL	2.163
95% Standard Bootstrap UCL	2.139	95% Bootstrap-t UCL	2.127
95% Hall's Bootstrap UCL	2.109	95% Percentile Bootstrap UCL	2.128
95% BCA Bootstrap UCL	2.108		
90% Chebyshev(Mean, Sd) UCL	2.254	95% Chebyshev(Mean, Sd) UCL	2.361
97.5% Chebyshev(Mean, Sd) UCL	2.51	99% Chebyshev(Mean, Sd) UCL	2.804

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	7.826
Maximum	17.1	Median	7.17
SD	5.635	Std. Error of Mean	1.878
Coefficient of Variation	0.72	Skewness	0.487
Mean of logged Data	1.763	SD of logged Data	0.872

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.32	95% Adjusted-CLT UCL (Chen-1995)	11.24
		95% Modified-t UCL (Johnson-1978)	11.37

Nonparametric Distribution Free UCLs

95% CLT UCL	10.92	95% Jackknife UCL	11.32
95% Standard Bootstrap UCL	10.75	95% Bootstrap-t UCL	11.93
95% Hall's Bootstrap UCL	10.89	95% Percentile Bootstrap UCL	10.75
95% BCA Bootstrap UCL	11.2		
90% Chebyshev(Mean, Sd) UCL	13.46	95% Chebyshev(Mean, Sd) UCL	16.01
97.5% Chebyshev(Mean, Sd) UCL	19.56	99% Chebyshev(Mean, Sd) UCL	26.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.94	Mean	10.82
Maximum	22.3	Median	9.39
SD	8.402	Std. Error of Mean	2.801
Coefficient of Variation	0.776	Skewness	0.373
Mean of logged Data	1.991	SD of logged Data	1.037

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.03	95% Adjusted-CLT UCL (Chen-1995)	15.8
		95% Modified-t UCL (Johnson-1978)	16.09

Nonparametric Distribution Free UCLs

95% CLT UCL	15.43	95% Jackknife UCL	16.03
95% Standard Bootstrap UCL	15.14	95% Bootstrap-t UCL	16.37
95% Hall's Bootstrap UCL	14.89	95% Percentile Bootstrap UCL	15.18
95% BCA Bootstrap UCL	15.8		
90% Chebyshev(Mean, Sd) UCL	19.23	95% Chebyshev(Mean, Sd) UCL	23.03
97.5% Chebyshev(Mean, Sd) UCL	28.31	99% Chebyshev(Mean, Sd) UCL	38.69

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.39	Mean	14.11
Maximum	31.4	Median	12
SD	11.11	Std. Error of Mean	3.703
Coefficient of Variation	0.787	Skewness	0.467
Mean of logged Data	2.261	SD of logged Data	1.024

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21	95% Adjusted-CLT UCL (Chen-1995)	20.82
		95% Modified-t UCL (Johnson-1978)	21.09

Nonparametric Distribution Free UCLs

95% CLT UCL	20.2	95% Jackknife UCL	21
95% Standard Bootstrap UCL	19.8	95% Bootstrap-t UCL	22.05
95% Hall's Bootstrap UCL	19.79	95% Percentile Bootstrap UCL	19.98
95% BCA Bootstrap UCL	20.27		
90% Chebyshev(Mean, Sd) UCL	25.22	95% Chebyshev(Mean, Sd) UCL	30.25
97.5% Chebyshev(Mean, Sd) UCL	37.24	99% Chebyshev(Mean, Sd) UCL	50.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	7.995
Maximum	15.3	Median	6.7
SD	5.005	Std. Error of Mean	1.668
Coefficient of Variation	0.626	Skewness	0.589
Mean of logged Data	1.893	SD of logged Data	0.657

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.1	95% Adjusted-CLT UCL (Chen-1995)	11.09
		95% Modified-t UCL (Johnson-1978)	11.15

Nonparametric Distribution Free UCLs

95% CLT UCL	10.74	95% Jackknife UCL	11.1
95% Standard Bootstrap UCL	10.59	95% Bootstrap-t UCL	11.63
95% Hall's Bootstrap UCL	10.29	95% Percentile Bootstrap UCL	10.59
95% BCA Bootstrap UCL	10.96		
90% Chebyshev(Mean, Sd) UCL	13	95% Chebyshev(Mean, Sd) UCL	15.27
97.5% Chebyshev(Mean, Sd) UCL	18.41	99% Chebyshev(Mean, Sd) UCL	24.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	5.764
Maximum	12.8	Median	4.7
SD	4.009	Std. Error of Mean	1.336
Coefficient of Variation	0.696	Skewness	0.865
Mean of logged Data	1.529	SD of logged Data	0.716

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.249	95% Adjusted-CLT UCL (Chen-1995)	8.374
		95% Modified-t UCL (Johnson-1978)	8.313

Nonparametric Distribution Free UCLs

95% CLT UCL	7.962	95% Jackknife UCL	8.249
95% Standard Bootstrap UCL	7.804	95% Bootstrap-t UCL	9.652
95% Hall's Bootstrap UCL	8.907	95% Percentile Bootstrap UCL	7.934
95% BCA Bootstrap UCL	8.191		
90% Chebyshev(Mean, Sd) UCL	9.773	95% Chebyshev(Mean, Sd) UCL	11.59
97.5% Chebyshev(Mean, Sd) UCL	14.11	99% Chebyshev(Mean, Sd) UCL	19.06

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	10.8
Maximum	24.6	Median	9.49
SD	8.42	Std. Error of Mean	2.807
Coefficient of Variation	0.779	Skewness	0.484
Mean of logged Data	2	SD of logged Data	1.017

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.02	95% Adjusted-CLT UCL (Chen-1995)	15.9
		95% Modified-t UCL (Johnson-1978)	16.1

Nonparametric Distribution Free UCLs

95% CLT UCL	15.42	95% Jackknife UCL	16.02
95% Standard Bootstrap UCL	15.13	95% Bootstrap-t UCL	16.49
95% Hall's Bootstrap UCL	15.54	95% Percentile Bootstrap UCL	15.23
95% BCA Bootstrap UCL	15.57		
90% Chebyshev(Mean, Sd) UCL	19.22	95% Chebyshev(Mean, Sd) UCL	23.04
97.5% Chebyshev(Mean, Sd) UCL	28.33	99% Chebyshev(Mean, Sd) UCL	38.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	3.541
Maximum	5.2	Median	3.255
SD	0.699	Std. Error of Mean	0.233
Coefficient of Variation	0.197	Skewness	2.097
Mean of logged Data	1.25	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.975	95% Adjusted-CLT UCL (Chen-1995)	4.099
		95% Modified-t UCL (Johnson-1978)	4.002

Nonparametric Distribution Free UCLs

95% CLT UCL	3.925	95% Jackknife UCL	3.975
95% Standard Bootstrap UCL	3.903	95% Bootstrap-t UCL	5.73
95% Hall's Bootstrap UCL	7.37	95% Percentile Bootstrap UCL	3.911
95% BCA Bootstrap UCL	4.094		
90% Chebyshev(Mean, Sd) UCL	4.24	95% Chebyshev(Mean, Sd) UCL	4.557
97.5% Chebyshev(Mean, Sd) UCL	4.997	99% Chebyshev(Mean, Sd) UCL	5.86

Suggested UCL to Use

95% Student's-t UCL	3.975	or 95% Modified-t UCL	4.002

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	11.88
Maximum	29.3	Median	11.6
SD	9.788	Std. Error of Mean	3.263
Coefficient of Variation	0.824	Skewness	0.67
Mean of logged Data	2.061	SD of logged Data	1.059

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.95	95% Adjusted-CLT UCL (Chen-1995)	18.03
		95% Modified-t UCL (Johnson-1978)	18.07

Nonparametric Distribution Free UCLs

95% CLT UCL	17.25	95% Jackknife UCL	17.95
95% Standard Bootstrap UCL	17.02	95% Bootstrap-t UCL	18.99
95% Hall's Bootstrap UCL	18.71	95% Percentile Bootstrap UCL	16.87
95% BCA Bootstrap UCL	17.41		
90% Chebyshev(Mean, Sd) UCL	21.67	95% Chebyshev(Mean, Sd) UCL	26.11
97.5% Chebyshev(Mean, Sd) UCL	32.26	99% Chebyshev(Mean, Sd) UCL	44.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.195	Mean	1.291
Maximum	1.325	Median	1.305
SD	0.0426	Std. Error of Mean	0.0142
Coefficient of Variation	0.033	Skewness	-1.703
Mean of logged Data	0.255	SD of logged Data	0.0337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.317	95% Adjusted-CLT UCL (Chen-1995)	1.306
		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.314	95% Jackknife UCL	1.317
95% Standard Bootstrap UCL	1.313	95% Bootstrap-t UCL	1.31
95% Hall's Bootstrap UCL	1.307	95% Percentile Bootstrap UCL	1.311
95% BCA Bootstrap UCL	1.308		
90% Chebyshev(Mean, Sd) UCL	1.334	95% Chebyshev(Mean, Sd) UCL	1.353
97.5% Chebyshev(Mean, Sd) UCL	1.38	99% Chebyshev(Mean, Sd) UCL	1.432

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	9.222
Maximum	18.4	Median	7.92
SD	6.37	Std. Error of Mean	2.123
Coefficient of Variation	0.691	Skewness	0.51
Mean of logged Data	1.969	SD of logged Data	0.793

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.17	95% Adjusted-CLT UCL (Chen-1995)	13.1
		95% Modified-t UCL (Johnson-1978)	13.23

Nonparametric Distribution Free UCLs

95% CLT UCL	12.71	95% Jackknife UCL	13.17
95% Standard Bootstrap UCL	12.48	95% Bootstrap-t UCL	13.59
95% Hall's Bootstrap UCL	12.45	95% Percentile Bootstrap UCL	12.6
95% BCA Bootstrap UCL	12.7		
90% Chebyshev(Mean, Sd) UCL	15.59	95% Chebyshev(Mean, Sd) UCL	18.48
97.5% Chebyshev(Mean, Sd) UCL	22.48	99% Chebyshev(Mean, Sd) UCL	30.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.945	Mean	1.652
Maximum	2.31	Median	1.83
SD	0.569	Std. Error of Mean	0.19
Coefficient of Variation	0.344	Skewness	-0.227
Mean of logged Data	0.442	SD of logged Data	0.377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.005	95% Adjusted-CLT UCL (Chen-1995)	1.949
		95% Modified-t UCL (Johnson-1978)	2.002

Nonparametric Distribution Free UCLs

95% CLT UCL	1.964	95% Jackknife UCL	2.005
95% Standard Bootstrap UCL	1.948	95% Bootstrap-t UCL	2.009
95% Hall's Bootstrap UCL	1.912	95% Percentile Bootstrap UCL	1.931
95% BCA Bootstrap UCL	1.925		
90% Chebyshev(Mean, Sd) UCL	2.221	95% Chebyshev(Mean, Sd) UCL	2.479
97.5% Chebyshev(Mean, Sd) UCL	2.836	99% Chebyshev(Mean, Sd) UCL	3.539

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.76	Mean	5.213
Maximum	9.55	Median	4.59
SD	2.589	Std. Error of Mean	0.863
Coefficient of Variation	0.497	Skewness	0.853
Mean of logged Data	1.548	SD of logged Data	0.474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.818	95% Adjusted-CLT UCL (Chen-1995)	6.895
		95% Modified-t UCL (Johnson-1978)	6.859

Nonparametric Distribution Free UCLs

95% CLT UCL	6.632	95% Jackknife UCL	6.818
95% Standard Bootstrap UCL	6.563	95% Bootstrap-t UCL	7.123
95% Hall's Bootstrap UCL	7.001	95% Percentile Bootstrap UCL	6.616
95% BCA Bootstrap UCL	6.814		
90% Chebyshev(Mean, Sd) UCL	7.802	95% Chebyshev(Mean, Sd) UCL	8.975
97.5% Chebyshev(Mean, Sd) UCL	10.6	99% Chebyshev(Mean, Sd) UCL	13.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	11.47
Maximum	25.4	Median	10.6
SD	8.366	Std. Error of Mean	2.789
Coefficient of Variation	0.729	Skewness	0.605
Mean of logged Data	2.155	SD of logged Data	0.843

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.66	95% Adjusted-CLT UCL (Chen-1995)	16.66
		95% Modified-t UCL (Johnson-1978)	16.75

Nonparametric Distribution Free UCLs

95% CLT UCL	16.06	95% Jackknife UCL	16.66
95% Standard Bootstrap UCL	15.8	95% Bootstrap-t UCL	18.02
95% Hall's Bootstrap UCL	17.15	95% Percentile Bootstrap UCL	15.8
95% BCA Bootstrap UCL	16.37		
90% Chebyshev(Mean, Sd) UCL	19.84	95% Chebyshev(Mean, Sd) UCL	23.63
97.5% Chebyshev(Mean, Sd) UCL	28.89	99% Chebyshev(Mean, Sd) UCL	39.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:12:57 PM
From File	21063D_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.5	Mean	13.61
Maximum	14.7	Median	13.7
SD	0.715	Std. Error of Mean	0.238
Coefficient of Variation	0.0525	Skewness	-0.147
Mean of logged Data	2.61	SD of logged Data	0.0528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.05	95% Adjusted-CLT UCL (Chen-1995)	13.99
		95% Modified-t UCL (Johnson-1978)	14.05

Nonparametric Distribution Free UCLs

95% CLT UCL	14	95% Jackknife UCL	14.05
95% Standard Bootstrap UCL	13.98	95% Bootstrap-t UCL	14.06
95% Hall's Bootstrap UCL	14.07	95% Percentile Bootstrap UCL	13.97
95% BCA Bootstrap UCL	14		
90% Chebyshev(Mean, Sd) UCL	14.33	95% Chebyshev(Mean, Sd) UCL	14.65
97.5% Chebyshev(Mean, Sd) UCL	15.1	99% Chebyshev(Mean, Sd) UCL	15.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.61	Mean	12.06
Maximum	15.7	Median	11.2
SD	2.493	Std. Error of Mean	0.831
Coefficient of Variation	0.207	Skewness	0.69

Mean of logged Data	2.472	SD of logged Data	0.199

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.61	95% Adjusted-CLT UCL (Chen-1995)	13.63
		95% Modified-t UCL (Johnson-1978)	13.64

Nonparametric Distribution Free UCLs

95% CLT UCL	13.43	95% Jackknife UCL	13.61
95% Standard Bootstrap UCL	13.36	95% Bootstrap-t UCL	13.93
95% Hall's Bootstrap UCL	13.2	95% Percentile Bootstrap UCL	13.37
95% BCA Bootstrap UCL	13.51		
90% Chebyshev(Mean, Sd) UCL	14.56	95% Chebyshev(Mean, Sd) UCL	15.69
97.5% Chebyshev(Mean, Sd) UCL	17.25	99% Chebyshev(Mean, Sd) UCL	20.33

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	44.3	Mean	46.76
Maximum	50.2	Median	46.5
SD	1.654	Std. Error of Mean	0.551
Coefficient of Variation	0.0354	Skewness	0.891
Mean of logged Data	3.844	SD of logged Data	0.035

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.78	95% Adjusted-CLT UCL (Chen-1995)	47.84
		95% Modified-t UCL (Johnson-1978)	47.81

Nonparametric Distribution Free UCLs

95% CLT UCL	47.66	95% Jackknife UCL	47.78
95% Standard Bootstrap UCL	47.63	95% Bootstrap-t UCL	48.11
95% Hall's Bootstrap UCL	48.57	95% Percentile Bootstrap UCL	47.59
95% BCA Bootstrap UCL	47.79		
90% Chebyshev(Mean, Sd) UCL	48.41	95% Chebyshev(Mean, Sd) UCL	49.16
97.5% Chebyshev(Mean, Sd) UCL	50.2	99% Chebyshev(Mean, Sd) UCL	52.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.798	Mean	1.255
Maximum	3.64	Median	0.938
SD	0.907	Std. Error of Mean	0.302
Coefficient of Variation	0.723	Skewness	2.842
Mean of logged Data	0.0938	SD of logged Data	0.475

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.818	95% Adjusted-CLT UCL (Chen-1995)	2.059
		95% Modified-t UCL (Johnson-1978)	1.865

Nonparametric Distribution Free UCLs

95% CLT UCL	1.753	95% Jackknife UCL	1.818
95% Standard Bootstrap UCL	1.732	95% Bootstrap-t UCL	3.847
95% Hall's Bootstrap UCL	3.612	95% Percentile Bootstrap UCL	1.831
95% BCA Bootstrap UCL	2.127		
90% Chebyshev(Mean, Sd) UCL	2.162	95% Chebyshev(Mean, Sd) UCL	2.573
97.5% Chebyshev(Mean, Sd) UCL	3.144	99% Chebyshev(Mean, Sd) UCL	4.264

Suggested UCL to Use

95% Student's-t UCL	1.818	or 95% Modified-t UCL	1.865

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.486	Mean	2.116
Maximum	4.93	Median	0.525
SD	2.105	Std. Error of Mean	0.702
Coefficient of Variation	0.995	Skewness	0.705
Mean of logged Data	0.224	SD of logged Data	1.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.421	95% Adjusted-CLT UCL (Chen-1995)	3.446
		95% Modified-t UCL (Johnson-1978)	3.448

Nonparametric Distribution Free UCLs

95% CLT UCL	3.27	95% Jackknife UCL	3.421
95% Standard Bootstrap UCL	3.178	95% Bootstrap-t UCL	3.721
95% Hall's Bootstrap UCL	2.88	95% Percentile Bootstrap UCL	3.224
95% BCA Bootstrap UCL	3.407		
90% Chebyshev(Mean, Sd) UCL	4.221	95% Chebyshev(Mean, Sd) UCL	5.175
97.5% Chebyshev(Mean, Sd) UCL	6.498	99% Chebyshev(Mean, Sd) UCL	9.098

Suggested UCL to Use

95% Hall's Bootstrap UCL	2.88

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.47	Mean	3.374
Maximum	7.9	Median	2.08
SD	2.096	Std. Error of Mean	0.699
Coefficient of Variation	0.621	Skewness	1.37
Mean of logged Data	1.065	SD of logged Data	0.567

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.674	95% Adjusted-CLT UCL (Chen-1995)	4.865
		95% Modified-t UCL (Johnson-1978)	4.727

Nonparametric Distribution Free UCLs

95% CLT UCL	4.524	95% Jackknife UCL	4.674
95% Standard Bootstrap UCL	4.448	95% Bootstrap-t UCL	5.384
95% Hall's Bootstrap UCL	5.062	95% Percentile Bootstrap UCL	4.517
95% BCA Bootstrap UCL	4.818		
90% Chebyshev(Mean, Sd) UCL	5.471	95% Chebyshev(Mean, Sd) UCL	6.42
97.5% Chebyshev(Mean, Sd) UCL	7.738	99% Chebyshev(Mean, Sd) UCL	10.33

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	18.29
Maximum	41.8	Median	15
SD	15.9	Std. Error of Mean	5.299
Coefficient of Variation	0.869	Skewness	0.404
Mean of logged Data	2.335	SD of logged Data	1.306

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.14	95% Adjusted-CLT UCL (Chen-1995)	27.76
		95% Modified-t UCL (Johnson-1978)	28.26

Nonparametric Distribution Free UCLs

95% CLT UCL	27	95% Jackknife UCL	28.14
95% Standard Bootstrap UCL	26.45	95% Bootstrap-t UCL	29.58
95% Hall's Bootstrap UCL	26.65	95% Percentile Bootstrap UCL	26.55
95% BCA Bootstrap UCL	27.34		
90% Chebyshev(Mean, Sd) UCL	34.18	95% Chebyshev(Mean, Sd) UCL	41.38
97.5% Chebyshev(Mean, Sd) UCL	51.38	99% Chebyshev(Mean, Sd) UCL	71.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	26.41
Maximum	63.2	Median	22.6
SD	23	Std. Error of Mean	7.667
Coefficient of Variation	0.871	Skewness	0.613
Mean of logged Data	2.742	SD of logged Data	1.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.67	95% Adjusted-CLT UCL (Chen-1995)	40.7
		95% Modified-t UCL (Johnson-1978)	40.93

Nonparametric Distribution Free UCLs

95% CLT UCL	39.02	95% Jackknife UCL	40.67
95% Standard Bootstrap UCL	38.43	95% Bootstrap-t UCL	45.52
95% Hall's Bootstrap UCL	43.15	95% Percentile Bootstrap UCL	38.77
95% BCA Bootstrap UCL	39.59		
90% Chebyshev(Mean, Sd) UCL	49.41	95% Chebyshev(Mean, Sd) UCL	59.83
97.5% Chebyshev(Mean, Sd) UCL	74.29	99% Chebyshev(Mean, Sd) UCL	102.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.035	Mean	32.54
Maximum	77.1	Median	25.2
SD	29.98	Std. Error of Mean	9.992
Coefficient of Variation	0.921	Skewness	0.549
Mean of logged Data	2.849	SD of logged Data	1.379

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.12	95% Adjusted-CLT UCL (Chen-1995)	50.93
		95% Modified-t UCL (Johnson-1978)	51.42

Nonparametric Distribution Free UCLs

95% CLT UCL	48.97	95% Jackknife UCL	51.12
95% Standard Bootstrap UCL	48.07	95% Bootstrap-t UCL	55.32
95% Hall's Bootstrap UCL	50.44	95% Percentile Bootstrap UCL	48.64
95% BCA Bootstrap UCL	49.85		
90% Chebyshev(Mean, Sd) UCL	62.51	95% Chebyshev(Mean, Sd) UCL	76.09
97.5% Chebyshev(Mean, Sd) UCL	94.94	99% Chebyshev(Mean, Sd) UCL	132

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.035	Mean	18.48
Maximum	42.7	Median	14.2
SD	16.02	Std. Error of Mean	5.339
Coefficient of Variation	0.867	Skewness	0.623
Mean of logged Data	2.461	SD of logged Data	1.103

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.4	95% Adjusted-CLT UCL (Chen-1995)	28.44
		95% Modified-t UCL (Johnson-1978)	28.59

Nonparametric Distribution Free UCLs

95% CLT UCL	27.26	95% Jackknife UCL	28.4
95% Standard Bootstrap UCL	26.91	95% Bootstrap-t UCL	30.77
95% Hall's Bootstrap UCL	27.48	95% Percentile Bootstrap UCL	27.32
95% BCA Bootstrap UCL	27.61		
90% Chebyshev(Mean, Sd) UCL	34.49	95% Chebyshev(Mean, Sd) UCL	41.75
97.5% Chebyshev(Mean, Sd) UCL	51.81	99% Chebyshev(Mean, Sd) UCL	71.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	12.98
Maximum	30	Median	9.91
SD	11.01	Std. Error of Mean	3.671
Coefficient of Variation	0.848	Skewness	0.557
Mean of logged Data	2.099	SD of logged Data	1.134

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.81	95% Adjusted-CLT UCL (Chen-1995)	19.75
		95% Modified-t UCL (Johnson-1978)	19.92

Nonparametric Distribution Free UCLs

95% CLT UCL	19.02	95% Jackknife UCL	19.81
95% Standard Bootstrap UCL	18.64	95% Bootstrap-t UCL	20.84
95% Hall's Bootstrap UCL	19.82	95% Percentile Bootstrap UCL	18.63
95% BCA Bootstrap UCL	19.33		
90% Chebyshev(Mean, Sd) UCL	23.99	95% Chebyshev(Mean, Sd) UCL	28.98
97.5% Chebyshev(Mean, Sd) UCL	35.9	99% Chebyshev(Mean, Sd) UCL	49.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	22.94
Maximum	50.2	Median	17.6
SD	20.49	Std. Error of Mean	6.829
Coefficient of Variation	0.893	Skewness	0.331
Mean of logged Data	2.483	SD of logged Data	1.419

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.64	95% Adjusted-CLT UCL (Chen-1995)	34.98
		95% Modified-t UCL (Johnson-1978)	35.76

Nonparametric Distribution Free UCLs

95% CLT UCL	34.17	95% Jackknife UCL	35.64
95% Standard Bootstrap UCL	33.62	95% Bootstrap-t UCL	36.69
95% Hall's Bootstrap UCL	32.04	95% Percentile Bootstrap UCL	33.96
95% BCA Bootstrap UCL	35.48		
90% Chebyshev(Mean, Sd) UCL	43.43	95% Chebyshev(Mean, Sd) UCL	52.71
97.5% Chebyshev(Mean, Sd) UCL	65.58	99% Chebyshev(Mean, Sd) UCL	90.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.035	Mean	6.002
Maximum	12.15	Median	3.58
SD	3.891	Std. Error of Mean	1.297
Coefficient of Variation	0.648	Skewness	0.867
Mean of logged Data	1.62	SD of logged Data	0.603

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.414	95% Adjusted-CLT UCL (Chen-1995)	8.536
		95% Modified-t UCL (Johnson-1978)	8.476

Nonparametric Distribution Free UCLs

95% CLT UCL	8.135	95% Jackknife UCL	8.414
95% Standard Bootstrap UCL	8.021	95% Bootstrap-t UCL	9.039
95% Hall's Bootstrap UCL	7.352	95% Percentile Bootstrap UCL	8.017
95% BCA Bootstrap UCL	8.576		
90% Chebyshev(Mean, Sd) UCL	9.893	95% Chebyshev(Mean, Sd) UCL	11.66
97.5% Chebyshev(Mean, Sd) UCL	14.1	99% Chebyshev(Mean, Sd) UCL	18.91

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	31.27
Maximum	67	Median	22.5
SD	27.85	Std. Error of Mean	9.285
Coefficient of Variation	0.891	Skewness	0.138
Mean of logged Data	2.694	SD of logged Data	1.574

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.54	95% Adjusted-CLT UCL (Chen-1995)	47
		95% Modified-t UCL (Johnson-1978)	48.61

Nonparametric Distribution Free UCLs

95% CLT UCL	46.55	95% Jackknife UCL	48.54
95% Standard Bootstrap UCL	45.64	95% Bootstrap-t UCL	50.63
95% Hall's Bootstrap UCL	43.05	95% Percentile Bootstrap UCL	45.96
95% BCA Bootstrap UCL	46.16		
90% Chebyshev(Mean, Sd) UCL	59.13	95% Chebyshev(Mean, Sd) UCL	71.74
97.5% Chebyshev(Mean, Sd) UCL	89.26	99% Chebyshev(Mean, Sd) UCL	123.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.904	Mean	1.635
Maximum	4.855	Median	1.3
SD	1.214	Std. Error of Mean	0.405
Coefficient of Variation	0.742	Skewness	2.932
Mean of logged Data	0.356	SD of logged Data	0.474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.388	95% Adjusted-CLT UCL (Chen-1995)	2.724
		95% Modified-t UCL (Johnson-1978)	2.454

Nonparametric Distribution Free UCLs

95% CLT UCL	2.301	95% Jackknife UCL	2.388
95% Standard Bootstrap UCL	2.282	95% Bootstrap-t UCL	13.2
95% Hall's Bootstrap UCL	10.62	95% Percentile Bootstrap UCL	2.42
95% BCA Bootstrap UCL	2.489		
90% Chebyshev(Mean, Sd) UCL	2.85	95% Chebyshev(Mean, Sd) UCL	3.4
97.5% Chebyshev(Mean, Sd) UCL	4.163	99% Chebyshev(Mean, Sd) UCL	5.663

Suggested UCL to Use

95% Student's-t UCL	2.388	or 95% Modified-t UCL	2.454

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.035	Mean	19.86
Maximum	47.5	Median	14.9
SD	17.65	Std. Error of Mean	5.882
Coefficient of Variation	0.889	Skewness	0.714
Mean of logged Data	2.508	SD of logged Data	1.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.8	95% Adjusted-CLT UCL (Chen-1995)	31.03
		95% Modified-t UCL (Johnson-1978)	31.03

Nonparametric Distribution Free UCLs

95% CLT UCL	29.53	95% Jackknife UCL	30.8
95% Standard Bootstrap UCL	28.92	95% Bootstrap-t UCL	33.1
95% Hall's Bootstrap UCL	32.03	95% Percentile Bootstrap UCL	29.29
95% BCA Bootstrap UCL	30.44		
90% Chebyshev(Mean, Sd) UCL	37.51	95% Chebyshev(Mean, Sd) UCL	45.5
97.5% Chebyshev(Mean, Sd) UCL	56.59	99% Chebyshev(Mean, Sd) UCL	78.39

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	2.379
Maximum	3.64	Median	2.25
SD	0.53	Std. Error of Mean	0.177
Coefficient of Variation	0.223	Skewness	1.919
Mean of logged Data	0.848	SD of logged Data	0.198

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.707	95% Adjusted-CLT UCL (Chen-1995)	2.79
		95% Modified-t UCL (Johnson-1978)	2.726

Nonparametric Distribution Free UCLs

95% CLT UCL	2.669	95% Jackknife UCL	2.707
95% Standard Bootstrap UCL	2.649	95% Bootstrap-t UCL	2.936
95% Hall's Bootstrap UCL	3.819	95% Percentile Bootstrap UCL	2.681

95% BCA Bootstrap UCL	2.783		
90% Chebyshev(Mean, Sd) UCL	2.909	95% Chebyshev(Mean, Sd) UCL	3.149
97.5% Chebyshev(Mean, Sd) UCL	3.482	99% Chebyshev(Mean, Sd) UCL	4.137

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.035	Mean	13.3
Maximum	32.6	Median	4.915
SD	11.71	Std. Error of Mean	3.902
Coefficient of Variation	0.88	Skewness	0.552
Mean of logged Data	2.158	SD of logged Data	1.021

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.56	95% Adjusted-CLT UCL (Chen-1995)	20.49
		95% Modified-t UCL (Johnson-1978)	20.68

Nonparametric Distribution Free UCLs

95% CLT UCL	19.72	95% Jackknife UCL	20.56
95% Standard Bootstrap UCL	19.24	95% Bootstrap-t UCL	21.31
95% Hall's Bootstrap UCL	18.41	95% Percentile Bootstrap UCL	19.46
95% BCA Bootstrap UCL	19.77		
90% Chebyshev(Mean, Sd) UCL	25.01	95% Chebyshev(Mean, Sd) UCL	30.31
97.5% Chebyshev(Mean, Sd) UCL	37.67	99% Chebyshev(Mean, Sd) UCL	52.12

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.035	Mean	31.65
Maximum	68.3	Median	22.8
SD	27.53	Std. Error of Mean	9.175
Coefficient of Variation	0.87	Skewness	0.18

Mean of logged Data	2.837	SD of logged Data	1.371

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.71	95% Adjusted-CLT UCL (Chen-1995)	47.33
		95% Modified-t UCL (Johnson-1978)	48.8

Nonparametric Distribution Free UCLs

95% CLT UCL	46.74	95% Jackknife UCL	48.71
95% Standard Bootstrap UCL	45.84	95% Bootstrap-t UCL	49.13
95% Hall's Bootstrap UCL	43.36	95% Percentile Bootstrap UCL	45.23
95% BCA Bootstrap UCL	46.67		
90% Chebyshev(Mean, Sd) UCL	59.17	95% Chebyshev(Mean, Sd) UCL	71.64
97.5% Chebyshev(Mean, Sd) UCL	88.95	99% Chebyshev(Mean, Sd) UCL	122.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:15:17 PM
From File	21063E_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.5	Mean	14.22
Maximum	15.5	Median	14.3
SD	1.095	Std. Error of Mean	0.365
Coefficient of Variation	0.077	Skewness	-2.183
Mean of logged Data	2.652	SD of logged Data	0.083

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.9	95% Adjusted-CLT UCL (Chen-1995)	14.54
		95% Modified-t UCL (Johnson-1978)	14.86

Nonparametric Distribution Free UCLs

95% CLT UCL	14.82	95% Jackknife UCL	14.9
95% Standard Bootstrap UCL	14.77	95% Bootstrap-t UCL	14.69
95% Hall's Bootstrap UCL	14.62	95% Percentile Bootstrap UCL	14.72
95% BCA Bootstrap UCL	14.63		
90% Chebyshev(Mean, Sd) UCL	15.32	95% Chebyshev(Mean, Sd) UCL	15.81
97.5% Chebyshev(Mean, Sd) UCL	16.5	99% Chebyshev(Mean, Sd) UCL	17.85

Suggested UCL to Use

95% Student's-t UCL	14.9	or 95% Modified-t UCL	14.86

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.94	Mean	13.37
Maximum	18.1	Median	12.1
SD	3.153	Std. Error of Mean	1.051
Coefficient of Variation	0.236	Skewness	0.272

Mean of logged Data	2.568	SD of logged Data	0.236

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.33	95% Adjusted-CLT UCL (Chen-1995)	15.2
		95% Modified-t UCL (Johnson-1978)	15.34

Nonparametric Distribution Free UCLs

95% CLT UCL	15.1	95% Jackknife UCL	15.33
95% Standard Bootstrap UCL	14.97	95% Bootstrap-t UCL	15.4
95% Hall's Bootstrap UCL	14.86	95% Percentile Bootstrap UCL	15.04
95% BCA Bootstrap UCL	15.13		
90% Chebyshev(Mean, Sd) UCL	16.52	95% Chebyshev(Mean, Sd) UCL	17.95
97.5% Chebyshev(Mean, Sd) UCL	19.93	99% Chebyshev(Mean, Sd) UCL	23.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	46.8	Mean	50.24
Maximum	62.2	Median	49.2
SD	4.609	Std. Error of Mean	1.536
Coefficient of Variation	0.0917	Skewness	2.685
Mean of logged Data	3.914	SD of logged Data	0.0842

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.1	95% Adjusted-CLT UCL (Chen-1995)	54.24
		95% Modified-t UCL (Johnson-1978)	53.33

Nonparametric Distribution Free UCLs

95% CLT UCL	52.77	95% Jackknife UCL	53.1
95% Standard Bootstrap UCL	52.69	95% Bootstrap-t UCL	58.94
95% Hall's Bootstrap UCL	65.26	95% Percentile Bootstrap UCL	53.04
95% BCA Bootstrap UCL	53.54		
90% Chebyshev(Mean, Sd) UCL	54.85	95% Chebyshev(Mean, Sd) UCL	56.94
97.5% Chebyshev(Mean, Sd) UCL	59.84	99% Chebyshev(Mean, Sd) UCL	65.53

Suggested UCL to Use

95% Student's-t UCL	53.1	or 95% Modified-t UCL	53.33

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.624	Mean	1.034
Maximum	1.51	Median	1.01
SD	0.235	Std. Error of Mean	0.0784
Coefficient of Variation	0.227	Skewness	0.47
Mean of logged Data	0.00978	SD of logged Data	0.234

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.18	95% Adjusted-CLT UCL (Chen-1995)	1.176
		95% Modified-t UCL (Johnson-1978)	1.182

Nonparametric Distribution Free UCLs

95% CLT UCL	1.163	95% Jackknife UCL	1.18
95% Standard Bootstrap UCL	1.154	95% Bootstrap-t UCL	1.191
95% Hall's Bootstrap UCL	1.274	95% Percentile Bootstrap UCL	1.157
95% BCA Bootstrap UCL	1.17		
90% Chebyshev(Mean, Sd) UCL	1.269	95% Chebyshev(Mean, Sd) UCL	1.376
97.5% Chebyshev(Mean, Sd) UCL	1.523	99% Chebyshev(Mean, Sd) UCL	1.814

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.489	Mean	0.661
Maximum	1.46	Median	0.525
SD	0.31	Std. Error of Mean	0.103
Coefficient of Variation	0.469	Skewness	2.646
Mean of logged Data	-0.48	SD of logged Data	0.348

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.853	95% Adjusted-CLT UCL (Chen-1995)	0.929
		95% Modified-t UCL (Johnson-1978)	0.868

Nonparametric Distribution Free UCLs

95% CLT UCL	0.831	95% Jackknife UCL	0.853
95% Standard Bootstrap UCL	0.823	95% Bootstrap-t UCL	1.378
95% Hall's Bootstrap UCL	1.403	95% Percentile Bootstrap UCL	0.848
95% BCA Bootstrap UCL	0.951		
90% Chebyshev(Mean, Sd) UCL	0.971	95% Chebyshev(Mean, Sd) UCL	1.112
97.5% Chebyshev(Mean, Sd) UCL	1.307	99% Chebyshev(Mean, Sd) UCL	1.69

Suggested UCL to Use

95% Student's-t UCL	0.853	or 95% Modified-t UCL	0.868

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.8	Mean	2.136
Maximum	2.95	Median	2.11
SD	0.327	Std. Error of Mean	0.109
Coefficient of Variation	0.153	Skewness	2.23
Mean of logged Data	0.75	SD of logged Data	0.138

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.339	95% Adjusted-CLT UCL (Chen-1995)	2.402
		95% Modified-t UCL (Johnson-1978)	2.352

Nonparametric Distribution Free UCLs

95% CLT UCL	2.315	95% Jackknife UCL	2.339
95% Standard Bootstrap UCL	2.301	95% Bootstrap-t UCL	2.504
95% Hall's Bootstrap UCL	3.138	95% Percentile Bootstrap UCL	2.323
95% BCA Bootstrap UCL	2.395		
90% Chebyshev(Mean, Sd) UCL	2.463	95% Chebyshev(Mean, Sd) UCL	2.611
97.5% Chebyshev(Mean, Sd) UCL	2.817	99% Chebyshev(Mean, Sd) UCL	3.221

Suggested UCL to Use

95% Student's-t UCL	2.339	or 95% Modified-t UCL	2.352

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	10.33
Maximum	29.1	Median	7.24
SD	9.855	Std. Error of Mean	3.285
Coefficient of Variation	0.954	Skewness	1.041
Mean of logged Data	1.879	SD of logged Data	1.048

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.44	95% Adjusted-CLT UCL (Chen-1995)	16.95
		95% Modified-t UCL (Johnson-1978)	16.63

Nonparametric Distribution Free UCLs

95% CLT UCL	15.73	95% Jackknife UCL	16.44
95% Standard Bootstrap UCL	15.6	95% Bootstrap-t UCL	18.86
95% Hall's Bootstrap UCL	15.77	95% Percentile Bootstrap UCL	15.75
95% BCA Bootstrap UCL	16.97		
90% Chebyshev(Mean, Sd) UCL	20.19	95% Chebyshev(Mean, Sd) UCL	24.65
97.5% Chebyshev(Mean, Sd) UCL	30.85	99% Chebyshev(Mean, Sd) UCL	43.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	15.95
Maximum	42.6	Median	13.4
SD	14.27	Std. Error of Mean	4.758
Coefficient of Variation	0.895	Skewness	0.928
Mean of logged Data	2.341	SD of logged Data	1.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.8	95% Adjusted-CLT UCL (Chen-1995)	25.35
		95% Modified-t UCL (Johnson-1978)	25.05

Nonparametric Distribution Free UCLs

95% CLT UCL	23.78	95% Jackknife UCL	24.8
95% Standard Bootstrap UCL	23.17	95% Bootstrap-t UCL	27.79
95% Hall's Bootstrap UCL	24.61	95% Percentile Bootstrap UCL	23.46
95% BCA Bootstrap UCL	24.83		
90% Chebyshev(Mean, Sd) UCL	30.23	95% Chebyshev(Mean, Sd) UCL	36.69
97.5% Chebyshev(Mean, Sd) UCL	45.67	99% Chebyshev(Mean, Sd) UCL	63.29

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	19.04
Maximum	53	Median	12.7
SD	18.59	Std. Error of Mean	6.196
Coefficient of Variation	0.976	Skewness	0.948
Mean of logged Data	2.434	SD of logged Data	1.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.56	95% Adjusted-CLT UCL (Chen-1995)	31.32
		95% Modified-t UCL (Johnson-1978)	30.88

Nonparametric Distribution Free UCLs

95% CLT UCL	29.23	95% Jackknife UCL	30.56
95% Standard Bootstrap UCL	28.67	95% Bootstrap-t UCL	34.69
95% Hall's Bootstrap UCL	27.98	95% Percentile Bootstrap UCL	29.06
95% BCA Bootstrap UCL	30.85		
90% Chebyshev(Mean, Sd) UCL	37.62	95% Chebyshev(Mean, Sd) UCL	46.04
97.5% Chebyshev(Mean, Sd) UCL	57.73	99% Chebyshev(Mean, Sd) UCL	80.69

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	11.05
Maximum	28.1	Median	7.61
SD	9.692	Std. Error of Mean	3.231
Coefficient of Variation	0.877	Skewness	0.933
Mean of logged Data	2.046	SD of logged Data	0.897

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.05	95% Adjusted-CLT UCL (Chen-1995)	17.44
		95% Modified-t UCL (Johnson-1978)	17.22

Nonparametric Distribution Free UCLs

95% CLT UCL	16.36	95% Jackknife UCL	17.05
95% Standard Bootstrap UCL	16.2	95% Bootstrap-t UCL	19.28
95% Hall's Bootstrap UCL	15.7	95% Percentile Bootstrap UCL	16.32
95% BCA Bootstrap UCL	16.58		
90% Chebyshev(Mean, Sd) UCL	20.74	95% Chebyshev(Mean, Sd) UCL	25.13
97.5% Chebyshev(Mean, Sd) UCL	31.22	99% Chebyshev(Mean, Sd) UCL	43.19

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	7.654
Maximum	21.3	Median	4.64
SD	7.142	Std. Error of Mean	2.381
Coefficient of Variation	0.933	Skewness	1.097
Mean of logged Data	1.645	SD of logged Data	0.932

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.08	95% Adjusted-CLT UCL (Chen-1995)	12.5

		95% Modified-t UCL (Johnson-1978)	12.23

Nonparametric Distribution Free UCLs

95% CLT UCL	11.57	95% Jackknife UCL	12.08
95% Standard Bootstrap UCL	11.37	95% Bootstrap-t UCL	13.85
95% Hall's Bootstrap UCL	10.82	95% Percentile Bootstrap UCL	11.59
95% BCA Bootstrap UCL	12.14		
90% Chebyshev(Mean, Sd) UCL	14.8	95% Chebyshev(Mean, Sd) UCL	18.03
97.5% Chebyshev(Mean, Sd) UCL	22.52	99% Chebyshev(Mean, Sd) UCL	31.34

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	14.05
Maximum	41.3	Median	8.68
SD	14.42	Std. Error of Mean	4.808
Coefficient of Variation	1.027	Skewness	1.046
Mean of logged Data	2.075	SD of logged Data	1.194

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.99	95% Adjusted-CLT UCL (Chen-1995)	23.75
		95% Modified-t UCL (Johnson-1978)	23.27

Nonparametric Distribution Free UCLs

95% CLT UCL	21.96	95% Jackknife UCL	22.99
95% Standard Bootstrap UCL	21.59	95% Bootstrap-t UCL	27.48
95% Hall's Bootstrap UCL	21.46	95% Percentile Bootstrap UCL	21.97
95% BCA Bootstrap UCL	23.31		
90% Chebyshev(Mean, Sd) UCL	28.47	95% Chebyshev(Mean, Sd) UCL	35.01
97.5% Chebyshev(Mean, Sd) UCL	44.07	99% Chebyshev(Mean, Sd) UCL	61.89

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.65	Mean	3.988
Maximum	6.76	Median	3.245
SD	1.413	Std. Error of Mean	0.471
Coefficient of Variation	0.354	Skewness	1.229
Mean of logged Data	1.334	SD of logged Data	0.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.863	95% Adjusted-CLT UCL (Chen-1995)	4.968
		95% Modified-t UCL (Johnson-1978)	4.895

Nonparametric Distribution Free UCLs

95% CLT UCL	4.762	95% Jackknife UCL	4.863
95% Standard Bootstrap UCL	4.71	95% Bootstrap-t UCL	5.598
95% Hall's Bootstrap UCL	4.887	95% Percentile Bootstrap UCL	4.753
95% BCA Bootstrap UCL	4.913		
90% Chebyshev(Mean, Sd) UCL	5.4	95% Chebyshev(Mean, Sd) UCL	6.04
97.5% Chebyshev(Mean, Sd) UCL	6.928	99% Chebyshev(Mean, Sd) UCL	8.673

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	1
Minimum	2.065	Mean	21.05
Maximum	47.4	Median	11.3
SD	17.23	Std. Error of Mean	6.514
Coefficient of Variation	0.819	Skewness	0.549
Mean of logged Data	2.641	SD of logged Data	1.095

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.71	95% Adjusted-CLT UCL (Chen-1995)	33.21
		95% Modified-t UCL (Johnson-1978)	33.94

Nonparametric Distribution Free UCLs

95% CLT UCL	31.77	95% Jackknife UCL	33.71

95% Standard Bootstrap UCL	30.87	95% Bootstrap-t UCL	38.18
95% Hall's Bootstrap UCL	29.84	95% Percentile Bootstrap UCL	30.94
95% BCA Bootstrap UCL	31.88		
90% Chebyshev(Mean, Sd) UCL	40.59	95% Chebyshev(Mean, Sd) UCL	49.45
97.5% Chebyshev(Mean, Sd) UCL	61.73	99% Chebyshev(Mean, Sd) UCL	85.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.18	Mean	1.276
Maximum	1.325	Median	1.3
SD	0.0479	Std. Error of Mean	0.016
Coefficient of Variation	0.0375	Skewness	-1.227
Mean of logged Data	0.243	SD of logged Data	0.0382

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.306	95% Adjusted-CLT UCL (Chen-1995)	1.295
		95% Modified-t UCL (Johnson-1978)	1.305

Nonparametric Distribution Free UCLs

95% CLT UCL	1.302	95% Jackknife UCL	1.306
95% Standard Bootstrap UCL	1.301	95% Bootstrap-t UCL	1.3
95% Hall's Bootstrap UCL	1.296	95% Percentile Bootstrap UCL	1.299
95% BCA Bootstrap UCL	1.296		
90% Chebyshev(Mean, Sd) UCL	1.324	95% Chebyshev(Mean, Sd) UCL	1.346
97.5% Chebyshev(Mean, Sd) UCL	1.376	99% Chebyshev(Mean, Sd) UCL	1.435

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	3.055	Mean	11.96
Maximum	32.9	Median	8
SD	11	Std. Error of Mean	3.667
Coefficient of Variation	0.92	Skewness	1.066
Mean of logged Data	2.095	SD of logged Data	0.935

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.78	95% Adjusted-CLT UCL (Chen-1995)	19.39
		95% Modified-t UCL (Johnson-1978)	19

Nonparametric Distribution Free UCLs

95% CLT UCL	17.99	95% Jackknife UCL	18.78
95% Standard Bootstrap UCL	17.71	95% Bootstrap-t UCL	21.83
95% Hall's Bootstrap UCL	17.02	95% Percentile Bootstrap UCL	18.01
95% BCA Bootstrap UCL	18.57		
90% Chebyshev(Mean, Sd) UCL	22.96	95% Chebyshev(Mean, Sd) UCL	27.95
97.5% Chebyshev(Mean, Sd) UCL	34.86	99% Chebyshev(Mean, Sd) UCL	48.45

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.934	Mean	2.075
Maximum	3.06	Median	2.31
SD	0.77	Std. Error of Mean	0.257
Coefficient of Variation	0.371	Skewness	-0.481
Mean of logged Data	0.654	SD of logged Data	0.435

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.552	95% Adjusted-CLT UCL (Chen-1995)	2.453
		95% Modified-t UCL (Johnson-1978)	2.545

Nonparametric Distribution Free UCLs

95% CLT UCL	2.497	95% Jackknife UCL	2.552
95% Standard Bootstrap UCL	2.468	95% Bootstrap-t UCL	2.547

95% Hall's Bootstrap UCL	2.425	95% Percentile Bootstrap UCL	2.47
95% BCA Bootstrap UCL	2.445		
90% Chebyshev(Mean, Sd) UCL	2.845	95% Chebyshev(Mean, Sd) UCL	3.194
97.5% Chebyshev(Mean, Sd) UCL	3.678	99% Chebyshev(Mean, Sd) UCL	4.629

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.055	Mean	6.554
Maximum	16.3	Median	3.245
SD	5.243	Std. Error of Mean	1.748
Coefficient of Variation	0.8	Skewness	1.125
Mean of logged Data	1.629	SD of logged Data	0.716

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.804	95% Adjusted-CLT UCL (Chen-1995)	10.13
		95% Modified-t UCL (Johnson-1978)	9.914

Nonparametric Distribution Free UCLs

95% CLT UCL	9.429	95% Jackknife UCL	9.804
95% Standard Bootstrap UCL	9.232	95% Bootstrap-t UCL	11.68
95% Hall's Bootstrap UCL	8.787	95% Percentile Bootstrap UCL	9.474
95% BCA Bootstrap UCL	9.668		
90% Chebyshev(Mean, Sd) UCL	11.8	95% Chebyshev(Mean, Sd) UCL	14.17
97.5% Chebyshev(Mean, Sd) UCL	17.47	99% Chebyshev(Mean, Sd) UCL	23.94

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.17

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0

Minimum	3.055	Mean	17.54
Maximum	50.1	Median	11.3
SD	17.4	Std. Error of Mean	5.799
Coefficient of Variation	0.992	Skewness	1.032
Mean of logged Data	2.364	SD of logged Data	1.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.32	95% Adjusted-CLT UCL (Chen-1995)	29.21
		95% Modified-t UCL (Johnson-1978)	28.65

Nonparametric Distribution Free UCLs

95% CLT UCL	27.08	95% Jackknife UCL	28.32
95% Standard Bootstrap UCL	26.29	95% Bootstrap-t UCL	32.88
95% Hall's Bootstrap UCL	25.99	95% Percentile Bootstrap UCL	27.2
95% BCA Bootstrap UCL	28.06		
90% Chebyshev(Mean, Sd) UCL	34.93	95% Chebyshev(Mean, Sd) UCL	42.81
97.5% Chebyshev(Mean, Sd) UCL	53.75	99% Chebyshev(Mean, Sd) UCL	75.24

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:38:22 PM
From File	21063F_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.7	Mean	12.6
Maximum	13.3	Median	12.6
SD	0.433	Std. Error of Mean	0.144
Coefficient of Variation	0.0344	Skewness	-0.713
Mean of logged Data	2.533	SD of logged Data	0.0347

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.87	95% Adjusted-CLT UCL (Chen-1995)	12.8
		95% Modified-t UCL (Johnson-1978)	12.86

Nonparametric Distribution Free UCLs

95% CLT UCL	12.84	95% Jackknife UCL	12.87
95% Standard Bootstrap UCL	12.82	95% Bootstrap-t UCL	12.84
95% Hall's Bootstrap UCL	12.83	95% Percentile Bootstrap UCL	12.81
95% BCA Bootstrap UCL	12.8		
90% Chebyshev(Mean, Sd) UCL	13.03	95% Chebyshev(Mean, Sd) UCL	13.23
97.5% Chebyshev(Mean, Sd) UCL	13.5	99% Chebyshev(Mean, Sd) UCL	14.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.23	Mean	12.79
Maximum	17.7	Median	11.4
SD	3.612	Std. Error of Mean	1.204
Coefficient of Variation	0.282	Skewness	0.65

Mean of logged Data	2.515	SD of logged Data	0.272

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.03	95% Adjusted-CLT UCL (Chen-1995)	15.05
		95% Modified-t UCL (Johnson-1978)	15.08

Nonparametric Distribution Free UCLs

95% CLT UCL	14.77	95% Jackknife UCL	15.03
95% Standard Bootstrap UCL	14.63	95% Bootstrap-t UCL	15.44
95% Hall's Bootstrap UCL	14.26	95% Percentile Bootstrap UCL	14.74
95% BCA Bootstrap UCL	14.98		
90% Chebyshev(Mean, Sd) UCL	16.41	95% Chebyshev(Mean, Sd) UCL	18.04
97.5% Chebyshev(Mean, Sd) UCL	20.31	99% Chebyshev(Mean, Sd) UCL	24.77

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	42.5	Mean	45.38
Maximum	47.6	Median	45.1
SD	1.664	Std. Error of Mean	0.555
Coefficient of Variation	0.0367	Skewness	-0.0756
Mean of logged Data	3.814	SD of logged Data	0.0368

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.41	95% Adjusted-CLT UCL (Chen-1995)	46.28
		95% Modified-t UCL (Johnson-1978)	46.41

Nonparametric Distribution Free UCLs

95% CLT UCL	46.29	95% Jackknife UCL	46.41
95% Standard Bootstrap UCL	46.26	95% Bootstrap-t UCL	46.32
95% Hall's Bootstrap UCL	46.3	95% Percentile Bootstrap UCL	46.26
95% BCA Bootstrap UCL	46.27		
90% Chebyshev(Mean, Sd) UCL	47.04	95% Chebyshev(Mean, Sd) UCL	47.8
97.5% Chebyshev(Mean, Sd) UCL	48.84	99% Chebyshev(Mean, Sd) UCL	50.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.869	Mean	1.747
Maximum	3.29	Median	1.56
SD	0.721	Std. Error of Mean	0.24
Coefficient of Variation	0.413	Skewness	1.397
Mean of logged Data	0.491	SD of logged Data	0.38

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.193	95% Adjusted-CLT UCL (Chen-1995)	2.261
		95% Modified-t UCL (Johnson-1978)	2.212

Nonparametric Distribution Free UCLs

95% CLT UCL	2.142	95% Jackknife UCL	2.193
95% Standard Bootstrap UCL	2.123	95% Bootstrap-t UCL	2.709
95% Hall's Bootstrap UCL	4.994	95% Percentile Bootstrap UCL	2.129
95% BCA Bootstrap UCL	2.249		
90% Chebyshev(Mean, Sd) UCL	2.467	95% Chebyshev(Mean, Sd) UCL	2.794
97.5% Chebyshev(Mean, Sd) UCL	3.247	99% Chebyshev(Mean, Sd) UCL	4.137

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.367	Mean	0.728
Maximum	1.58	Median	0.53
SD	0.429	Std. Error of Mean	0.143
Coefficient of Variation	0.59	Skewness	1.583
Mean of logged Data	-0.438	SD of logged Data	0.487

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.994	95% Adjusted-CLT UCL (Chen-1995)	1.044
		95% Modified-t UCL (Johnson-1978)	1.007

Nonparametric Distribution Free UCLs

95% CLT UCL	0.963	95% Jackknife UCL	0.994
95% Standard Bootstrap UCL	0.95	95% Bootstrap-t UCL	2.031
95% Hall's Bootstrap UCL	3.217	95% Percentile Bootstrap UCL	0.984
95% BCA Bootstrap UCL	1.022		
90% Chebyshev(Mean, Sd) UCL	1.157	95% Chebyshev(Mean, Sd) UCL	1.352
97.5% Chebyshev(Mean, Sd) UCL	1.622	99% Chebyshev(Mean, Sd) UCL	2.152

Suggested UCL to Use

95% Student's-t UCL	0.994	or 95% Modified-t UCL	1.007

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.38	Mean	2.417
Maximum	4.09	Median	2.085
SD	0.886	Std. Error of Mean	0.295
Coefficient of Variation	0.367	Skewness	1.309
Mean of logged Data	0.83	SD of logged Data	0.333

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.966	95% Adjusted-CLT UCL (Chen-1995)	3.04
		95% Modified-t UCL (Johnson-1978)	2.987

Nonparametric Distribution Free UCLs

95% CLT UCL	2.902	95% Jackknife UCL	2.966
95% Standard Bootstrap UCL	2.885	95% Bootstrap-t UCL	3.948
95% Hall's Bootstrap UCL	8.047	95% Percentile Bootstrap UCL	2.899
95% BCA Bootstrap UCL	2.984		
90% Chebyshev(Mean, Sd) UCL	3.303	95% Chebyshev(Mean, Sd) UCL	3.704
97.5% Chebyshev(Mean, Sd) UCL	4.261	99% Chebyshev(Mean, Sd) UCL	5.355

Suggested UCL to Use

95% Student's-t UCL	2.966	or 95% Modified-t UCL	2.987

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	13.53
Maximum	40.1	Median	6.14
SD	15.38	Std. Error of Mean	5.126
Coefficient of Variation	1.136	Skewness	1.336
Mean of logged Data	2.009	SD of logged Data	1.176

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.07	95% Adjusted-CLT UCL (Chen-1995)	24.4
		95% Modified-t UCL (Johnson-1978)	23.45

Nonparametric Distribution Free UCLs

95% CLT UCL	21.96	95% Jackknife UCL	23.07
95% Standard Bootstrap UCL	21.47	95% Bootstrap-t UCL	41.33
95% Hall's Bootstrap UCL	68.55	95% Percentile Bootstrap UCL	21.7
95% BCA Bootstrap UCL	24.2		
90% Chebyshev(Mean, Sd) UCL	28.91	95% Chebyshev(Mean, Sd) UCL	35.88
97.5% Chebyshev(Mean, Sd) UCL	45.54	99% Chebyshev(Mean, Sd) UCL	64.53

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	17.41
Maximum	52.2	Median	7.92
SD	20.08	Std. Error of Mean	6.694
Coefficient of Variation	1.153	Skewness	1.295
Mean of logged Data	2.187	SD of logged Data	1.286

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.86	95% Adjusted-CLT UCL (Chen-1995)	31.51
		95% Modified-t UCL (Johnson-1978)	30.34

Nonparametric Distribution Free UCLs

95% CLT UCL	28.42	95% Jackknife UCL	29.86
95% Standard Bootstrap UCL	27.78	95% Bootstrap-t UCL	50.75
95% Hall's Bootstrap UCL	87.87	95% Percentile Bootstrap UCL	28.35
95% BCA Bootstrap UCL	30.4		
90% Chebyshev(Mean, Sd) UCL	37.49	95% Chebyshev(Mean, Sd) UCL	46.59
97.5% Chebyshev(Mean, Sd) UCL	59.22	99% Chebyshev(Mean, Sd) UCL	84.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	23.36
Maximum	68.9	Median	10.9
SD	26.42	Std. Error of Mean	8.806
Coefficient of Variation	1.131	Skewness	1.289
Mean of logged Data	2.528	SD of logged Data	1.225

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.74	95% Adjusted-CLT UCL (Chen-1995)	41.89
		95% Modified-t UCL (Johnson-1978)	40.37

Nonparametric Distribution Free UCLs

95% CLT UCL	37.84	95% Jackknife UCL	39.74
95% Standard Bootstrap UCL	37.13	95% Bootstrap-t UCL	66.84
95% Hall's Bootstrap UCL	115.1	95% Percentile Bootstrap UCL	37.2
95% BCA Bootstrap UCL	41.48		
90% Chebyshev(Mean, Sd) UCL	49.78	95% Chebyshev(Mean, Sd) UCL	61.74
97.5% Chebyshev(Mean, Sd) UCL	78.35	99% Chebyshev(Mean, Sd) UCL	111

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	11.96
Maximum	33.4	Median	5.61
SD	12.2	Std. Error of Mean	4.068
Coefficient of Variation	1.021	Skewness	1.354
Mean of logged Data	2.064	SD of logged Data	0.937

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.52	95% Adjusted-CLT UCL (Chen-1995)	20.61
		95% Modified-t UCL (Johnson-1978)	19.83

Nonparametric Distribution Free UCLs

95% CLT UCL	18.65	95% Jackknife UCL	19.52
95% Standard Bootstrap UCL	18.12	95% Bootstrap-t UCL	34.69
95% Hall's Bootstrap UCL	53.08	95% Percentile Bootstrap UCL	18.56
95% BCA Bootstrap UCL	20.33		
90% Chebyshev(Mean, Sd) UCL	24.16	95% Chebyshev(Mean, Sd) UCL	29.69
97.5% Chebyshev(Mean, Sd) UCL	37.36	99% Chebyshev(Mean, Sd) UCL	52.43

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	8.719
Maximum	25	Median	4.13
SD	9.19	Std. Error of Mean	3.063
Coefficient of Variation	1.054	Skewness	1.36
Mean of logged Data	1.711	SD of logged Data	0.985

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.42	95% Adjusted-CLT UCL (Chen-1995)	15.24
		95% Modified-t UCL (Johnson-1978)	14.65

Nonparametric Distribution Free UCLs

95% CLT UCL	13.76	95% Jackknife UCL	14.42
95% Standard Bootstrap UCL	13.47	95% Bootstrap-t UCL	24.94
95% Hall's Bootstrap UCL	39.73	95% Percentile Bootstrap UCL	13.78
95% BCA Bootstrap UCL	15.25		
90% Chebyshev(Mean, Sd) UCL	17.91	95% Chebyshev(Mean, Sd) UCL	22.07
97.5% Chebyshev(Mean, Sd) UCL	27.85	99% Chebyshev(Mean, Sd) UCL	39.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	18.86
Maximum	56.2	Median	8.87
SD	21.61	Std. Error of Mean	7.205
Coefficient of Variation	1.146	Skewness	1.269
Mean of logged Data	2.25	SD of logged Data	1.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.26	95% Adjusted-CLT UCL (Chen-1995)	33.97
		95% Modified-t UCL (Johnson-1978)	32.77

Nonparametric Distribution Free UCLs

95% CLT UCL	30.72	95% Jackknife UCL	32.26
95% Standard Bootstrap UCL	30.25	95% Bootstrap-t UCL	53.3
95% Hall's Bootstrap UCL	94.49	95% Percentile Bootstrap UCL	30.49
95% BCA Bootstrap UCL	33.87		
90% Chebyshev(Mean, Sd) UCL	40.48	95% Chebyshev(Mean, Sd) UCL	50.27
97.5% Chebyshev(Mean, Sd) UCL	63.86	99% Chebyshev(Mean, Sd) UCL	90.55

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	4.449
Maximum	9.04	Median	3.3
SD	2.431	Std. Error of Mean	0.81
Coefficient of Variation	0.546	Skewness	1.634
Mean of logged Data	1.392	SD of logged Data	0.439

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.955	95% Adjusted-CLT UCL (Chen-1995)	6.253
		95% Modified-t UCL (Johnson-1978)	6.029

Nonparametric Distribution Free UCLs

95% CLT UCL	5.782	95% Jackknife UCL	5.955
95% Standard Bootstrap UCL	5.69	95% Bootstrap-t UCL	42.21
95% Hall's Bootstrap UCL	26.77	95% Percentile Bootstrap UCL	5.701
95% BCA Bootstrap UCL	5.802		
90% Chebyshev(Mean, Sd) UCL	6.879	95% Chebyshev(Mean, Sd) UCL	7.98
97.5% Chebyshev(Mean, Sd) UCL	9.508	99% Chebyshev(Mean, Sd) UCL	12.51

Suggested UCL to Use

95% Student's-t UCL	5.955	or 95% Modified-t UCL	6.029

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	21.92
Maximum	68.5	Median	9.21
SD	26.6	Std. Error of Mean	8.866
Coefficient of Variation	1.214	Skewness	1.346
Mean of logged Data	2.322	SD of logged Data	1.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.41	95% Adjusted-CLT UCL (Chen-1995)	40.75
		95% Modified-t UCL (Johnson-1978)	39.07

Nonparametric Distribution Free UCLs

95% CLT UCL	36.5	95% Jackknife UCL	38.41
95% Standard Bootstrap UCL	35.7	95% Bootstrap-t UCL	71.01
95% Hall's Bootstrap UCL	117.1	95% Percentile Bootstrap UCL	36.66
95% BCA Bootstrap UCL	39.46		
90% Chebyshev(Mean, Sd) UCL	48.52	95% Chebyshev(Mean, Sd) UCL	60.57
97.5% Chebyshev(Mean, Sd) UCL	77.29	99% Chebyshev(Mean, Sd) UCL	110.1

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.25	Mean	1.282
Maximum	1.33	Median	1.265
SD	0.0312	Std. Error of Mean	0.0104
Coefficient of Variation	0.0244	Skewness	0.655
Mean of logged Data	0.248	SD of logged Data	0.0242

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.301	95% Adjusted-CLT UCL (Chen-1995)	1.301
		95% Modified-t UCL (Johnson-1978)	1.301

Nonparametric Distribution Free UCLs

95% CLT UCL	1.299	95% Jackknife UCL	1.301
95% Standard Bootstrap UCL	1.298	95% Bootstrap-t UCL	1.307
95% Hall's Bootstrap UCL	1.299	95% Percentile Bootstrap UCL	1.297
95% BCA Bootstrap UCL	1.299		
90% Chebyshev(Mean, Sd) UCL	1.313	95% Chebyshev(Mean, Sd) UCL	1.327
97.5% Chebyshev(Mean, Sd) UCL	1.347	99% Chebyshev(Mean, Sd) UCL	1.385

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8

		Number of Missing Observations	0
Minimum	3.13	Mean	14.45
Maximum	42.2	Median	6.25
SD	15.64	Std. Error of Mean	5.214
Coefficient of Variation	1.082	Skewness	1.369
Mean of logged Data	2.184	SD of logged Data	1.023

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.15	95% Adjusted-CLT UCL (Chen-1995)	25.57
		95% Modified-t UCL (Johnson-1978)	24.54

Nonparametric Distribution Free UCLs

95% CLT UCL	23.03	95% Jackknife UCL	24.15
95% Standard Bootstrap UCL	22.4	95% Bootstrap-t UCL	44.63
95% Hall's Bootstrap UCL	67.74	95% Percentile Bootstrap UCL	22.88
95% BCA Bootstrap UCL	25.04		
90% Chebyshev(Mean, Sd) UCL	30.09	95% Chebyshev(Mean, Sd) UCL	37.18
97.5% Chebyshev(Mean, Sd) UCL	47.01	99% Chebyshev(Mean, Sd) UCL	66.33

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	3.838
Maximum	5.58	Median	3.68
SD	1.06	Std. Error of Mean	0.353
Coefficient of Variation	0.276	Skewness	-0.236
Mean of logged Data	1.306	SD of logged Data	0.308

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.495	95% Adjusted-CLT UCL (Chen-1995)	4.389
		95% Modified-t UCL (Johnson-1978)	4.49

Nonparametric Distribution Free UCLs

95% CLT UCL	4.419	95% Jackknife UCL	4.495
95% Standard Bootstrap UCL	4.379	95% Bootstrap-t UCL	4.438

95% Hall's Bootstrap UCL	4.474	95% Percentile Bootstrap UCL	4.363
95% BCA Bootstrap UCL	4.362		
90% Chebyshev(Mean, Sd) UCL	4.897	95% Chebyshev(Mean, Sd) UCL	5.377
97.5% Chebyshev(Mean, Sd) UCL	6.044	99% Chebyshev(Mean, Sd) UCL	7.352

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	9.052
Maximum	28.1	Median	3.59
SD	9.442	Std. Error of Mean	3.147
Coefficient of Variation	1.043	Skewness	1.577
Mean of logged Data	1.817	SD of logged Data	0.867

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.9	95% Adjusted-CLT UCL (Chen-1995)	16
		95% Modified-t UCL (Johnson-1978)	15.18

Nonparametric Distribution Free UCLs

95% CLT UCL	14.23	95% Jackknife UCL	14.9
95% Standard Bootstrap UCL	13.96	95% Bootstrap-t UCL	33.63
95% Hall's Bootstrap UCL	41.56	95% Percentile Bootstrap UCL	14.19
95% BCA Bootstrap UCL	15.98		
90% Chebyshev(Mean, Sd) UCL	18.49	95% Chebyshev(Mean, Sd) UCL	22.77
97.5% Chebyshev(Mean, Sd) UCL	28.71	99% Chebyshev(Mean, Sd) UCL	40.37

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	22.77

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.13	Mean	21.63
Maximum	66.6	Median	9.02
SD	25.28	Std. Error of Mean	8.428
Coefficient of Variation	1.169	Skewness	1.368
Mean of logged Data	2.448	SD of logged Data	1.2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.3	95% Adjusted-CLT UCL (Chen-1995)	39.59
		95% Modified-t UCL (Johnson-1978)	37.94

Nonparametric Distribution Free UCLs

95% CLT UCL	35.49	95% Jackknife UCL	37.3
95% Standard Bootstrap UCL	34.44	95% Bootstrap-t UCL	63.59
95% Hall's Bootstrap UCL	113.1	95% Percentile Bootstrap UCL	36.28
95% BCA Bootstrap UCL	39.89		
90% Chebyshev(Mean, Sd) UCL	46.91	95% Chebyshev(Mean, Sd) UCL	58.36
97.5% Chebyshev(Mean, Sd) UCL	74.26	99% Chebyshev(Mean, Sd) UCL	105.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:39:49 PM
From File	21063G_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.8	Mean	13.73
Maximum	14.6	Median	13.9
SD	0.557	Std. Error of Mean	0.186
Coefficient of Variation	0.0405	Skewness	-0.256
Mean of logged Data	2.619	SD of logged Data	0.0408

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.08	95% Adjusted-CLT UCL (Chen-1995)	14.02
		95% Modified-t UCL (Johnson-1978)	14.08

Nonparametric Distribution Free UCLs

95% CLT UCL	14.04	95% Jackknife UCL	14.08
95% Standard Bootstrap UCL	14.02	95% Bootstrap-t UCL	14.07
95% Hall's Bootstrap UCL	14.02	95% Percentile Bootstrap UCL	14.01
95% BCA Bootstrap UCL	14.01		
90% Chebyshev(Mean, Sd) UCL	14.29	95% Chebyshev(Mean, Sd) UCL	14.54
97.5% Chebyshev(Mean, Sd) UCL	14.89	99% Chebyshev(Mean, Sd) UCL	15.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.2	Mean	18.59
Maximum	61	Median	12.5
SD	16.25	Std. Error of Mean	5.417
Coefficient of Variation	0.874	Skewness	2.769

Mean of logged Data	2.731	SD of logged Data	0.568

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.66	95% Adjusted-CLT UCL (Chen-1995)	32.84
		95% Modified-t UCL (Johnson-1978)	29.49

Nonparametric Distribution Free UCLs

95% CLT UCL	27.5	95% Jackknife UCL	28.66
95% Standard Bootstrap UCL	27.01	95% Bootstrap-t UCL	59.36
95% Hall's Bootstrap UCL	57.56	95% Percentile Bootstrap UCL	28.57
95% BCA Bootstrap UCL	33.56		
90% Chebyshev(Mean, Sd) UCL	34.84	95% Chebyshev(Mean, Sd) UCL	42.2
97.5% Chebyshev(Mean, Sd) UCL	52.42	99% Chebyshev(Mean, Sd) UCL	72.48

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	42.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	46.7	Mean	48.01
Maximum	49	Median	48
SD	0.662	Std. Error of Mean	0.221
Coefficient of Variation	0.0138	Skewness	-0.459
Mean of logged Data	3.871	SD of logged Data	0.0138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.42	95% Adjusted-CLT UCL (Chen-1995)	48.34
		95% Modified-t UCL (Johnson-1978)	48.42

Nonparametric Distribution Free UCLs

95% CLT UCL	48.37	95% Jackknife UCL	48.42
95% Standard Bootstrap UCL	48.34	95% Bootstrap-t UCL	48.41
95% Hall's Bootstrap UCL	48.45	95% Percentile Bootstrap UCL	48.33
95% BCA Bootstrap UCL	48.31		
90% Chebyshev(Mean, Sd) UCL	48.67	95% Chebyshev(Mean, Sd) UCL	48.97
97.5% Chebyshev(Mean, Sd) UCL	49.39	99% Chebyshev(Mean, Sd) UCL	50.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.3	Mean	1.793
Maximum	2.38	Median	1.64
SD	0.351	Std. Error of Mean	0.117
Coefficient of Variation	0.196	Skewness	0.383
Mean of logged Data	0.567	SD of logged Data	0.195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.011	95% Adjusted-CLT UCL (Chen-1995)	2.002
		95% Modified-t UCL (Johnson-1978)	2.014

Nonparametric Distribution Free UCLs

95% CLT UCL	1.986	95% Jackknife UCL	2.011
95% Standard Bootstrap UCL	1.973	95% Bootstrap-t UCL	2.022
95% Hall's Bootstrap UCL	1.992	95% Percentile Bootstrap UCL	1.984
95% BCA Bootstrap UCL	1.992		
90% Chebyshev(Mean, Sd) UCL	2.145	95% Chebyshev(Mean, Sd) UCL	2.304
97.5% Chebyshev(Mean, Sd) UCL	2.525	99% Chebyshev(Mean, Sd) UCL	2.959

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.358	Mean	0.734
Maximum	1.42	Median	0.515
SD	0.4	Std. Error of Mean	0.133
Coefficient of Variation	0.544	Skewness	0.925
Mean of logged Data	-0.429	SD of logged Data	0.505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.982	95% Adjusted-CLT UCL (Chen-1995)	0.997
		95% Modified-t UCL (Johnson-1978)	0.989

Nonparametric Distribution Free UCLs

95% CLT UCL	0.953	95% Jackknife UCL	0.982
95% Standard Bootstrap UCL	0.945	95% Bootstrap-t UCL	1.054
95% Hall's Bootstrap UCL	0.891	95% Percentile Bootstrap UCL	0.952
95% BCA Bootstrap UCL	0.974		
90% Chebyshev(Mean, Sd) UCL	1.134	95% Chebyshev(Mean, Sd) UCL	1.315
97.5% Chebyshev(Mean, Sd) UCL	1.566	99% Chebyshev(Mean, Sd) UCL	2.06

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.995	Mean	2.311
Maximum	3.24	Median	2.1
SD	0.412	Std. Error of Mean	0.137
Coefficient of Variation	0.178	Skewness	1.751
Mean of logged Data	0.825	SD of logged Data	0.162

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.566	95% Adjusted-CLT UCL (Chen-1995)	2.622
		95% Modified-t UCL (Johnson-1978)	2.58

Nonparametric Distribution Free UCLs

95% CLT UCL	2.537	95% Jackknife UCL	2.566
95% Standard Bootstrap UCL	2.529	95% Bootstrap-t UCL	2.908
95% Hall's Bootstrap UCL	2.715	95% Percentile Bootstrap UCL	2.533
95% BCA Bootstrap UCL	2.588		
90% Chebyshev(Mean, Sd) UCL	2.723	95% Chebyshev(Mean, Sd) UCL	2.909
97.5% Chebyshev(Mean, Sd) UCL	3.168	99% Chebyshev(Mean, Sd) UCL	3.676

Suggested UCL to Use

95% Student's-t UCL	2.566	or 95% Modified-t UCL	2.58

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	12.68
Maximum	34.8	Median	5.39
SD	13.63	Std. Error of Mean	4.544
Coefficient of Variation	1.075	Skewness	0.884
Mean of logged Data	1.94	SD of logged Data	1.185

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.13	95% Adjusted-CLT UCL (Chen-1995)	21.59
		95% Modified-t UCL (Johnson-1978)	21.36

Nonparametric Distribution Free UCLs

95% CLT UCL	20.16	95% Jackknife UCL	21.13
95% Standard Bootstrap UCL	19.89	95% Bootstrap-t UCL	23.44
95% Hall's Bootstrap UCL	17.49	95% Percentile Bootstrap UCL	19.79
95% BCA Bootstrap UCL	21.39		
90% Chebyshev(Mean, Sd) UCL	26.32	95% Chebyshev(Mean, Sd) UCL	32.49
97.5% Chebyshev(Mean, Sd) UCL	41.06	99% Chebyshev(Mean, Sd) UCL	57.9

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.43	Mean	18.32
Maximum	50.1	Median	7.57
SD	20.8	Std. Error of Mean	6.934
Coefficient of Variation	1.135	Skewness	0.836
Mean of logged Data	2.137	SD of logged Data	1.405

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.22	95% Adjusted-CLT UCL (Chen-1995)	31.79
		95% Modified-t UCL (Johnson-1978)	31.54

Nonparametric Distribution Free UCLs

95% CLT UCL	29.73	95% Jackknife UCL	31.22
95% Standard Bootstrap UCL	28.94	95% Bootstrap-t UCL	33.83
95% Hall's Bootstrap UCL	25.6	95% Percentile Bootstrap UCL	29.81
95% BCA Bootstrap UCL	31.4		
90% Chebyshev(Mean, Sd) UCL	39.12	95% Chebyshev(Mean, Sd) UCL	48.55
97.5% Chebyshev(Mean, Sd) UCL	61.62	99% Chebyshev(Mean, Sd) UCL	87.31

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	23.58
Maximum	61.7	Median	9.74
SD	26.06	Std. Error of Mean	8.687
Coefficient of Variation	1.105	Skewness	0.827
Mean of logged Data	2.487	SD of logged Data	1.273

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.73	95% Adjusted-CLT UCL (Chen-1995)	40.42
		95% Modified-t UCL (Johnson-1978)	40.13

Nonparametric Distribution Free UCLs

95% CLT UCL	37.86	95% Jackknife UCL	39.73
95% Standard Bootstrap UCL	37.21	95% Bootstrap-t UCL	42.21
95% Hall's Bootstrap UCL	32.38	95% Percentile Bootstrap UCL	36.72
95% BCA Bootstrap UCL	37.3		
90% Chebyshev(Mean, Sd) UCL	49.64	95% Chebyshev(Mean, Sd) UCL	61.44
97.5% Chebyshev(Mean, Sd) UCL	77.83	99% Chebyshev(Mean, Sd) UCL	110

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	12.24
Maximum	30.8	Median	4.68
SD	12.55	Std. Error of Mean	4.184
Coefficient of Variation	1.025	Skewness	0.863
Mean of logged Data	2.014	SD of logged Data	1.029

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.02	95% Adjusted-CLT UCL (Chen-1995)	20.41
		95% Modified-t UCL (Johnson-1978)	20.22

Nonparametric Distribution Free UCLs

95% CLT UCL	19.13	95% Jackknife UCL	20.02
95% Standard Bootstrap UCL	18.77	95% Bootstrap-t UCL	21.52
95% Hall's Bootstrap UCL	16.29	95% Percentile Bootstrap UCL	18.36
95% BCA Bootstrap UCL	20.54		
90% Chebyshev(Mean, Sd) UCL	24.8	95% Chebyshev(Mean, Sd) UCL	30.48
97.5% Chebyshev(Mean, Sd) UCL	38.37	99% Chebyshev(Mean, Sd) UCL	53.87

Suggested UCL to Use

95% Hall's Bootstrap UCL	16.29

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	9.434
Maximum	26.7	Median	3.52
SD	10.1	Std. Error of Mean	3.365
Coefficient of Variation	1.07	Skewness	0.97
Mean of logged Data	1.704	SD of logged Data	1.086

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.69	95% Adjusted-CLT UCL (Chen-1995)	16.13
		95% Modified-t UCL (Johnson-1978)	15.87

Nonparametric Distribution Free UCLs

95% CLT UCL	14.97	95% Jackknife UCL	15.69
95% Standard Bootstrap UCL	14.63	95% Bootstrap-t UCL	17.99
95% Hall's Bootstrap UCL	12.93	95% Percentile Bootstrap UCL	14.9
95% BCA Bootstrap UCL	15.49		
90% Chebyshev(Mean, Sd) UCL	19.53	95% Chebyshev(Mean, Sd) UCL	24.1
97.5% Chebyshev(Mean, Sd) UCL	30.45	99% Chebyshev(Mean, Sd) UCL	42.92

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	18.34
Maximum	50.8	Median	7.24
SD	20.6	Std. Error of Mean	6.868
Coefficient of Variation	1.124	Skewness	0.863
Mean of logged Data	2.182	SD of logged Data	1.346

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.11	95% Adjusted-CLT UCL (Chen-1995)	31.74
		95% Modified-t UCL (Johnson-1978)	31.44

Nonparametric Distribution Free UCLs

95% CLT UCL	29.63	95% Jackknife UCL	31.11
95% Standard Bootstrap UCL	28.78	95% Bootstrap-t UCL	34.68
95% Hall's Bootstrap UCL	25.84	95% Percentile Bootstrap UCL	28.58
95% BCA Bootstrap UCL	29.89		
90% Chebyshev(Mean, Sd) UCL	38.94	95% Chebyshev(Mean, Sd) UCL	48.27
97.5% Chebyshev(Mean, Sd) UCL	61.23	99% Chebyshev(Mean, Sd) UCL	86.67

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.075	Mean	4.58
Maximum	8	Median	3.235
SD	2.102	Std. Error of Mean	0.701
Coefficient of Variation	0.459	Skewness	0.926
Mean of logged Data	1.438	SD of logged Data	0.419

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.883	95% Adjusted-CLT UCL (Chen-1995)	5.963
		95% Modified-t UCL (Johnson-1978)	5.919

Nonparametric Distribution Free UCLs

95% CLT UCL	5.732	95% Jackknife UCL	5.883
95% Standard Bootstrap UCL	5.66	95% Bootstrap-t UCL	6.174
95% Hall's Bootstrap UCL	5.258	95% Percentile Bootstrap UCL	5.657
95% BCA Bootstrap UCL	5.947		
90% Chebyshev(Mean, Sd) UCL	6.682	95% Chebyshev(Mean, Sd) UCL	7.634
97.5% Chebyshev(Mean, Sd) UCL	8.955	99% Chebyshev(Mean, Sd) UCL	11.55

Suggested UCL to Use

95% Student's-t UCL	5.883	or 95% Modified-t UCL	5.919

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	20.87
Maximum	57.6	Median	9.72
SD	23.23	Std. Error of Mean	7.742
Coefficient of Variation	1.113	Skewness	0.849
Mean of logged Data	2.292	SD of logged Data	1.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	35.26	95% Adjusted-CLT UCL (Chen-1995)	35.94
		95% Modified-t UCL (Johnson-1978)	35.63

Nonparametric Distribution Free UCLs

95% CLT UCL	33.6	95% Jackknife UCL	35.26
95% Standard Bootstrap UCL	32.53	95% Bootstrap-t UCL	39.35
95% Hall's Bootstrap UCL	29.53	95% Percentile Bootstrap UCL	33.01
95% BCA Bootstrap UCL	34.57		
90% Chebyshev(Mean, Sd) UCL	44.09	95% Chebyshev(Mean, Sd) UCL	54.62
97.5% Chebyshev(Mean, Sd) UCL	69.22	99% Chebyshev(Mean, Sd) UCL	97.9

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.23	Mean	1.287
Maximum	1.32	Median	1.29
SD	0.0274	Std. Error of Mean	0.00913
Coefficient of Variation	0.0213	Skewness	-1.095
Mean of logged Data	0.252	SD of logged Data	0.0215

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.304	95% Adjusted-CLT UCL (Chen-1995)	1.298
		95% Modified-t UCL (Johnson-1978)	1.303

Nonparametric Distribution Free UCLs

95% CLT UCL	1.302	95% Jackknife UCL	1.304
95% Standard Bootstrap UCL	1.301	95% Bootstrap-t UCL	1.3
95% Hall's Bootstrap UCL	1.3	95% Percentile Bootstrap UCL	1.3
95% BCA Bootstrap UCL	1.298		
90% Chebyshev(Mean, Sd) UCL	1.314	95% Chebyshev(Mean, Sd) UCL	1.326
97.5% Chebyshev(Mean, Sd) UCL	1.344	99% Chebyshev(Mean, Sd) UCL	1.377

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	14.38
Maximum	37	Median	5.58
SD	14.97	Std. Error of Mean	4.99
Coefficient of Variation	1.041	Skewness	0.858
Mean of logged Data	2.141	SD of logged Data	1.076

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.66	95% Adjusted-CLT UCL (Chen-1995)	24.11
		95% Modified-t UCL (Johnson-1978)	23.89

Nonparametric Distribution Free UCLs

95% CLT UCL	22.58	95% Jackknife UCL	23.66
95% Standard Bootstrap UCL	22.16	95% Bootstrap-t UCL	25.48
95% Hall's Bootstrap UCL	19.33	95% Percentile Bootstrap UCL	22.31
95% BCA Bootstrap UCL	24.2		
90% Chebyshev(Mean, Sd) UCL	29.35	95% Chebyshev(Mean, Sd) UCL	36.13
97.5% Chebyshev(Mean, Sd) UCL	45.54	99% Chebyshev(Mean, Sd) UCL	64.03

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.69	Mean	3.771
Maximum	5.22	Median	3.63
SD	0.784	Std. Error of Mean	0.261
Coefficient of Variation	0.208	Skewness	0.576
Mean of logged Data	1.309	SD of logged Data	0.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.257	95% Adjusted-CLT UCL (Chen-1995)	4.255

		95% Modified-t UCL (Johnson-1978)	4.266

Nonparametric Distribution Free UCLs

95% CLT UCL	4.201	95% Jackknife UCL	4.257
95% Standard Bootstrap UCL	4.171	95% Bootstrap-t UCL	4.355
95% Hall's Bootstrap UCL	4.365	95% Percentile Bootstrap UCL	4.189
95% BCA Bootstrap UCL	4.216		
90% Chebyshev(Mean, Sd) UCL	4.556	95% Chebyshev(Mean, Sd) UCL	4.911
97.5% Chebyshev(Mean, Sd) UCL	5.404	99% Chebyshev(Mean, Sd) UCL	6.373

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.82	Mean	8.082
Maximum	20	Median	3.61
SD	7.102	Std. Error of Mean	2.367
Coefficient of Variation	0.879	Skewness	0.95
Mean of logged Data	1.763	SD of logged Data	0.828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.48	95% Adjusted-CLT UCL (Chen-1995)	12.78
		95% Modified-t UCL (Johnson-1978)	12.61

Nonparametric Distribution Free UCLs

95% CLT UCL	11.98	95% Jackknife UCL	12.48
95% Standard Bootstrap UCL	11.7	95% Bootstrap-t UCL	13.95
95% Hall's Bootstrap UCL	10.49	95% Percentile Bootstrap UCL	11.75
95% BCA Bootstrap UCL	12.52		
90% Chebyshev(Mean, Sd) UCL	15.18	95% Chebyshev(Mean, Sd) UCL	18.4
97.5% Chebyshev(Mean, Sd) UCL	22.87	99% Chebyshev(Mean, Sd) UCL	31.64

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	20.81
Maximum	57.7	Median	9.47
SD	22.46	Std. Error of Mean	7.487
Coefficient of Variation	1.079	Skewness	0.893
Mean of logged Data	2.42	SD of logged Data	1.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.74	95% Adjusted-CLT UCL (Chen-1995)	35.51
		95% Modified-t UCL (Johnson-1978)	35.11

Nonparametric Distribution Free UCLs

95% CLT UCL	33.13	95% Jackknife UCL	34.74
95% Standard Bootstrap UCL	32.51	95% Bootstrap-t UCL	38.21
95% Hall's Bootstrap UCL	29.01	95% Percentile Bootstrap UCL	32.87
95% BCA Bootstrap UCL	34.96		
90% Chebyshev(Mean, Sd) UCL	43.27	95% Chebyshev(Mean, Sd) UCL	53.45
97.5% Chebyshev(Mean, Sd) UCL	67.57	99% Chebyshev(Mean, Sd) UCL	95.31

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:41:11 PM
From File	21063H_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	15	Mean	16.5
Maximum	18.5	Median	16.4
SD	1.058	Std. Error of Mean	0.353
Coefficient of Variation	0.0641	Skewness	0.513
Mean of logged Data	2.802	SD of logged Data	0.0636

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.16	95% Adjusted-CLT UCL (Chen-1995)	17.14
		95% Modified-t UCL (Johnson-1978)	17.17

Nonparametric Distribution Free UCLs

95% CLT UCL	17.08	95% Jackknife UCL	17.16
95% Standard Bootstrap UCL	17.04	95% Bootstrap-t UCL	17.24
95% Hall's Bootstrap UCL	17.28	95% Percentile Bootstrap UCL	17.08
95% BCA Bootstrap UCL	17.09		
90% Chebyshev(Mean, Sd) UCL	17.56	95% Chebyshev(Mean, Sd) UCL	18.04
97.5% Chebyshev(Mean, Sd) UCL	18.7	99% Chebyshev(Mean, Sd) UCL	20.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.4	Mean	23.54
Maximum	63.6	Median	14.2
SD	20.24	Std. Error of Mean	6.747
Coefficient of Variation	0.86	Skewness	1.599
Mean of logged Data	2.911	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.09	95% Adjusted-CLT UCL (Chen-1995)	38.49
		95% Modified-t UCL (Johnson-1978)	36.69

Nonparametric Distribution Free UCLs

95% CLT UCL	34.64	95% Jackknife UCL	36.09
95% Standard Bootstrap UCL	33.7	95% Bootstrap-t UCL	92.01
95% Hall's Bootstrap UCL	101.4	95% Percentile Bootstrap UCL	34.8
95% BCA Bootstrap UCL	36.96		
90% Chebyshev(Mean, Sd) UCL	43.79	95% Chebyshev(Mean, Sd) UCL	52.96
97.5% Chebyshev(Mean, Sd) UCL	65.68	99% Chebyshev(Mean, Sd) UCL	90.68

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	52.96

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	48	Mean	52.14
Maximum	57.3	Median	50.7
SD	3.064	Std. Error of Mean	1.021
Coefficient of Variation	0.0588	Skewness	0.568
Mean of logged Data	3.953	SD of logged Data	0.0581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.04	95% Adjusted-CLT UCL (Chen-1995)	54.03
		95% Modified-t UCL (Johnson-1978)	54.08

Nonparametric Distribution Free UCLs

95% CLT UCL	53.82	95% Jackknife UCL	54.04
95% Standard Bootstrap UCL	53.71	95% Bootstrap-t UCL	54.35
95% Hall's Bootstrap UCL	53.94	95% Percentile Bootstrap UCL	53.74
95% BCA Bootstrap UCL	53.94		
90% Chebyshev(Mean, Sd) UCL	55.21	95% Chebyshev(Mean, Sd) UCL	56.6
97.5% Chebyshev(Mean, Sd) UCL	58.52	99% Chebyshev(Mean, Sd) UCL	62.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.41	Mean	2.369
Maximum	4.04	Median	2.25
SD	0.76	Std. Error of Mean	0.253
Coefficient of Variation	0.321	Skewness	1.338
Mean of logged Data	0.821	SD of logged Data	0.299

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.84	95% Adjusted-CLT UCL (Chen-1995)	2.906
		95% Modified-t UCL (Johnson-1978)	2.859

Nonparametric Distribution Free UCLs

95% CLT UCL	2.785	95% Jackknife UCL	2.84
95% Standard Bootstrap UCL	2.767	95% Bootstrap-t UCL	3.053
95% Hall's Bootstrap UCL	4.873	95% Percentile Bootstrap UCL	2.787
95% BCA Bootstrap UCL	2.894		
90% Chebyshev(Mean, Sd) UCL	3.129	95% Chebyshev(Mean, Sd) UCL	3.473
97.5% Chebyshev(Mean, Sd) UCL	3.95	99% Chebyshev(Mean, Sd) UCL	4.888

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.505	Mean	0.952
Maximum	2.13	Median	0.665
SD	0.585	Std. Error of Mean	0.195
Coefficient of Variation	0.614	Skewness	1.229
Mean of logged Data	-0.195	SD of logged Data	0.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.314	95% Adjusted-CLT UCL (Chen-1995)	1.358
		95% Modified-t UCL (Johnson-1978)	1.328

Nonparametric Distribution Free UCLs

95% CLT UCL	1.273	95% Jackknife UCL	1.314
95% Standard Bootstrap UCL	1.261	95% Bootstrap-t UCL	1.502
95% Hall's Bootstrap UCL	1.268	95% Percentile Bootstrap UCL	1.258
95% BCA Bootstrap UCL	1.328		
90% Chebyshev(Mean, Sd) UCL	1.537	95% Chebyshev(Mean, Sd) UCL	1.801
97.5% Chebyshev(Mean, Sd) UCL	2.169	99% Chebyshev(Mean, Sd) UCL	2.891

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.05	Mean	4.691
Maximum	8.19	Median	5.02
SD	2.708	Std. Error of Mean	0.903
Coefficient of Variation	0.577	Skewness	0.227
Mean of logged Data	1.375	SD of logged Data	0.636

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.369	95% Adjusted-CLT UCL (Chen-1995)	6.248
		95% Modified-t UCL (Johnson-1978)	6.38

Nonparametric Distribution Free UCLs

95% CLT UCL	6.175	95% Jackknife UCL	6.369
95% Standard Bootstrap UCL	6.062	95% Bootstrap-t UCL	6.457
95% Hall's Bootstrap UCL	5.866	95% Percentile Bootstrap UCL	6.079
95% BCA Bootstrap UCL	6.193		
90% Chebyshev(Mean, Sd) UCL	7.398	95% Chebyshev(Mean, Sd) UCL	8.625
97.5% Chebyshev(Mean, Sd) UCL	10.33	99% Chebyshev(Mean, Sd) UCL	13.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.05	Mean	24.73
Maximum	57.9	Median	16.3
SD	24.7	Std. Error of Mean	8.235
Coefficient of Variation	0.999	Skewness	0.614
Mean of logged Data	2.486	SD of logged Data	1.456

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.05	95% Adjusted-CLT UCL (Chen-1995)	40.08
		95% Modified-t UCL (Johnson-1978)	40.33

Nonparametric Distribution Free UCLs

95% CLT UCL	38.28	95% Jackknife UCL	40.05
95% Standard Bootstrap UCL	37.26	95% Bootstrap-t UCL	42.48
95% Hall's Bootstrap UCL	34.5	95% Percentile Bootstrap UCL	38.95
95% BCA Bootstrap UCL	38.63		
90% Chebyshev(Mean, Sd) UCL	49.44	95% Chebyshev(Mean, Sd) UCL	60.63
97.5% Chebyshev(Mean, Sd) UCL	76.16	99% Chebyshev(Mean, Sd) UCL	106.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.06	Mean	31.37
Maximum	73.1	Median	20.1
SD	31.19	Std. Error of Mean	10.4
Coefficient of Variation	0.994	Skewness	0.611
Mean of logged Data	2.713	SD of logged Data	1.487

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	50.71	95% Adjusted-CLT UCL (Chen-1995)	50.74
		95% Modified-t UCL (Johnson-1978)	51.06

Nonparametric Distribution Free UCLs

95% CLT UCL	48.48	95% Jackknife UCL	50.71
95% Standard Bootstrap UCL	47.49	95% Bootstrap-t UCL	52.93
95% Hall's Bootstrap UCL	44.08	95% Percentile Bootstrap UCL	48.5
95% BCA Bootstrap UCL	50.1		
90% Chebyshev(Mean, Sd) UCL	62.57	95% Chebyshev(Mean, Sd) UCL	76.7
97.5% Chebyshev(Mean, Sd) UCL	96.31	99% Chebyshev(Mean, Sd) UCL	134.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	44.84
Maximum	107	Median	27.4
SD	45.78	Std. Error of Mean	15.26
Coefficient of Variation	1.021	Skewness	0.642
Mean of logged Data	3.025	SD of logged Data	1.532

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	73.22	95% Adjusted-CLT UCL (Chen-1995)	73.44
		95% Modified-t UCL (Johnson-1978)	73.77

Nonparametric Distribution Free UCLs

95% CLT UCL	69.95	95% Jackknife UCL	73.22
95% Standard Bootstrap UCL	68.83	95% Bootstrap-t UCL	75
95% Hall's Bootstrap UCL	62.77	95% Percentile Bootstrap UCL	69.5
95% BCA Bootstrap UCL	70.06		
90% Chebyshev(Mean, Sd) UCL	90.63	95% Chebyshev(Mean, Sd) UCL	111.4
97.5% Chebyshev(Mean, Sd) UCL	140.2	99% Chebyshev(Mean, Sd) UCL	196.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.155	Mean	25.68
Maximum	62.2	Median	13.5
SD	25.81	Std. Error of Mean	8.604
Coefficient of Variation	1.005	Skewness	0.704
Mean of logged Data	2.627	SD of logged Data	1.278

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.68	95% Adjusted-CLT UCL (Chen-1995)	41.99
		95% Modified-t UCL (Johnson-1978)	42.01

Nonparametric Distribution Free UCLs

95% CLT UCL	39.83	95% Jackknife UCL	41.68
95% Standard Bootstrap UCL	39.21	95% Bootstrap-t UCL	44.34
95% Hall's Bootstrap UCL	35.39	95% Percentile Bootstrap UCL	38.64
95% BCA Bootstrap UCL	40.34		
90% Chebyshev(Mean, Sd) UCL	51.49	95% Chebyshev(Mean, Sd) UCL	63.18
97.5% Chebyshev(Mean, Sd) UCL	79.41	99% Chebyshev(Mean, Sd) UCL	111.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	14.92
Maximum	35.1	Median	9.74
SD	13.96	Std. Error of Mean	4.652
Coefficient of Variation	0.936	Skewness	0.632
Mean of logged Data	2.152	SD of logged Data	1.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.57	95% Adjusted-CLT UCL (Chen-1995)	23.61
		95% Modified-t UCL (Johnson-1978)	23.73

Nonparametric Distribution Free UCLs

95% CLT UCL	22.57	95% Jackknife UCL	23.57
95% Standard Bootstrap UCL	22.05	95% Bootstrap-t UCL	25.24
95% Hall's Bootstrap UCL	20.64	95% Percentile Bootstrap UCL	22.06
95% BCA Bootstrap UCL	23.07		
90% Chebyshev(Mean, Sd) UCL	28.87	95% Chebyshev(Mean, Sd) UCL	35.19
97.5% Chebyshev(Mean, Sd) UCL	43.97	99% Chebyshev(Mean, Sd) UCL	61.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.05	Mean	26.44
Maximum	61.6	Median	16.8
SD	25.83	Std. Error of Mean	8.61
Coefficient of Variation	0.977	Skewness	0.593
Mean of logged Data	2.555	SD of logged Data	1.479

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.45	95% Adjusted-CLT UCL (Chen-1995)	42.42
		95% Modified-t UCL (Johnson-1978)	42.74

Nonparametric Distribution Free UCLs

95% CLT UCL	40.6	95% Jackknife UCL	42.45
95% Standard Bootstrap UCL	39.93	95% Bootstrap-t UCL	46.35
95% Hall's Bootstrap UCL	37.09	95% Percentile Bootstrap UCL	39.43
95% BCA Bootstrap UCL	40.89		
90% Chebyshev(Mean, Sd) UCL	52.27	95% Chebyshev(Mean, Sd) UCL	63.97
97.5% Chebyshev(Mean, Sd) UCL	80.21	99% Chebyshev(Mean, Sd) UCL	112.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.7	Mean	7.361

Maximum	15.3	Median	4.45
SD	5.498	Std. Error of Mean	1.833
Coefficient of Variation	0.747	Skewness	0.765
Mean of logged Data	1.75	SD of logged Data	0.733

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.77	95% Adjusted-CLT UCL (Chen-1995)	10.87
		95% Modified-t UCL (Johnson-1978)	10.85

Nonparametric Distribution Free UCLs

95% CLT UCL	10.38	95% Jackknife UCL	10.77
95% Standard Bootstrap UCL	10.18	95% Bootstrap-t UCL	11.29
95% Hall's Bootstrap UCL	9.334	95% Percentile Bootstrap UCL	10.1
95% BCA Bootstrap UCL	10.87		
90% Chebyshev(Mean, Sd) UCL	12.86	95% Chebyshev(Mean, Sd) UCL	15.35
97.5% Chebyshev(Mean, Sd) UCL	18.81	99% Chebyshev(Mean, Sd) UCL	25.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.05	Mean	34.3
Maximum	82	Median	23.9
SD	34.32	Std. Error of Mean	11.44
Coefficient of Variation	1.001	Skewness	0.599
Mean of logged Data	2.725	SD of logged Data	1.605

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.57	95% Adjusted-CLT UCL (Chen-1995)	55.56
		95% Modified-t UCL (Johnson-1978)	55.95

Nonparametric Distribution Free UCLs

95% CLT UCL	53.11	95% Jackknife UCL	55.57
95% Standard Bootstrap UCL	51.87	95% Bootstrap-t UCL	58.21
95% Hall's Bootstrap UCL	48.5	95% Percentile Bootstrap UCL	52.88
95% BCA Bootstrap UCL	54.02		

90% Chebyshev(Mean, Sd) UCL	68.62	95% Chebyshev(Mean, Sd) UCL	84.16
97.5% Chebyshev(Mean, Sd) UCL	105.7	99% Chebyshev(Mean, Sd) UCL	148.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.235	Mean	1.271
Maximum	1.315	Median	1.27
SD	0.0242	Std. Error of Mean	0.00807
Coefficient of Variation	0.019	Skewness	0.573
Mean of logged Data	0.24	SD of logged Data	0.019

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.286	95% Adjusted-CLT UCL (Chen-1995)	1.286
		95% Modified-t UCL (Johnson-1978)	1.286

Nonparametric Distribution Free UCLs

95% CLT UCL	1.284	95% Jackknife UCL	1.286
95% Standard Bootstrap UCL	1.284	95% Bootstrap-t UCL	1.291
95% Hall's Bootstrap UCL	1.306	95% Percentile Bootstrap UCL	1.284
95% BCA Bootstrap UCL	1.285		
90% Chebyshev(Mean, Sd) UCL	1.295	95% Chebyshev(Mean, Sd) UCL	1.306
97.5% Chebyshev(Mean, Sd) UCL	1.322	99% Chebyshev(Mean, Sd) UCL	1.351

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	29.57
Maximum	72	Median	16.4
SD	30.09	Std. Error of Mean	10.03
Coefficient of Variation	1.018	Skewness	0.698
Mean of logged Data	2.724	SD of logged Data	1.343

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.22	95% Adjusted-CLT UCL (Chen-1995)	48.56
		95% Modified-t UCL (Johnson-1978)	48.61

Nonparametric Distribution Free UCLs

95% CLT UCL	46.06	95% Jackknife UCL	48.22
95% Standard Bootstrap UCL	44.89	95% Bootstrap-t UCL	52.04
95% Hall's Bootstrap UCL	41.07	95% Percentile Bootstrap UCL	45.95
95% BCA Bootstrap UCL	47.73		
90% Chebyshev(Mean, Sd) UCL	59.66	95% Chebyshev(Mean, Sd) UCL	73.29
97.5% Chebyshev(Mean, Sd) UCL	92.21	99% Chebyshev(Mean, Sd) UCL	129.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.25	Mean	3.56
Maximum	5.43	Median	3.6
SD	0.977	Std. Error of Mean	0.326
Coefficient of Variation	0.274	Skewness	0.58
Mean of logged Data	1.236	SD of logged Data	0.275

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.166	95% Adjusted-CLT UCL (Chen-1995)	4.163
		95% Modified-t UCL (Johnson-1978)	4.176

Nonparametric Distribution Free UCLs

95% CLT UCL	4.096	95% Jackknife UCL	4.166
95% Standard Bootstrap UCL	4.059	95% Bootstrap-t UCL	4.235
95% Hall's Bootstrap UCL	4.395	95% Percentile Bootstrap UCL	4.083
95% BCA Bootstrap UCL	4.106		
90% Chebyshev(Mean, Sd) UCL	4.537	95% Chebyshev(Mean, Sd) UCL	4.98
97.5% Chebyshev(Mean, Sd) UCL	5.594	99% Chebyshev(Mean, Sd) UCL	6.801

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	12.81
Maximum	28.5	Median	8.01
SD	10.95	Std. Error of Mean	3.651
Coefficient of Variation	0.855	Skewness	0.715
Mean of logged Data	2.181	SD of logged Data	0.937

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.6	95% Adjusted-CLT UCL (Chen-1995)	19.75
		95% Modified-t UCL (Johnson-1978)	19.75

Nonparametric Distribution Free UCLs

95% CLT UCL	18.82	95% Jackknife UCL	19.6
95% Standard Bootstrap UCL	18.47	95% Bootstrap-t UCL	20.95
95% Hall's Bootstrap UCL	17.12	95% Percentile Bootstrap UCL	18.76
95% BCA Bootstrap UCL	19.32		
90% Chebyshev(Mean, Sd) UCL	23.77	95% Chebyshev(Mean, Sd) UCL	28.73
97.5% Chebyshev(Mean, Sd) UCL	35.61	99% Chebyshev(Mean, Sd) UCL	49.14

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	34.25
Maximum	81.9	Median	23.7
SD	33.26	Std. Error of Mean	11.09
Coefficient of Variation	0.971	Skewness	0.614
Mean of logged Data	2.864	SD of logged Data	1.399

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.87	95% Adjusted-CLT UCL (Chen-1995)	54.91
		95% Modified-t UCL (Johnson-1978)	55.25

Nonparametric Distribution Free UCLs

95% CLT UCL	52.49	95% Jackknife UCL	54.87
95% Standard Bootstrap UCL	51.41	95% Bootstrap-t UCL	58.46
95% Hall's Bootstrap UCL	48.07	95% Percentile Bootstrap UCL	54
95% BCA Bootstrap UCL	53.95		
90% Chebyshev(Mean, Sd) UCL	67.52	95% Chebyshev(Mean, Sd) UCL	82.58
97.5% Chebyshev(Mean, Sd) UCL	103.5	99% Chebyshev(Mean, Sd) UCL	144.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:42:28 PM
From File	21063l_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	12.8	Mean	13.76
Maximum	14.4	Median	13.9
SD	0.57	Std. Error of Mean	0.19
Coefficient of Variation	0.0415	Skewness	-0.456
Mean of logged Data	2.621	SD of logged Data	0.0418

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.11	95% Adjusted-CLT UCL (Chen-1995)	14.04
		95% Modified-t UCL (Johnson-1978)	14.1

Nonparametric Distribution Free UCLs

95% CLT UCL	14.07	95% Jackknife UCL	14.11
95% Standard Bootstrap UCL	14.05	95% Bootstrap-t UCL	14.08
95% Hall's Bootstrap UCL	14.01	95% Percentile Bootstrap UCL	14.04
95% BCA Bootstrap UCL	14.04		
90% Chebyshev(Mean, Sd) UCL	14.33	95% Chebyshev(Mean, Sd) UCL	14.58
97.5% Chebyshev(Mean, Sd) UCL	14.94	99% Chebyshev(Mean, Sd) UCL	15.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.77	Mean	32.02
Maximum	104	Median	25.9
SD	31.34	Std. Error of Mean	10.45
Coefficient of Variation	0.979	Skewness	1.873

Mean of logged Data	3.128	SD of logged Data	0.833

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.44	95% Adjusted-CLT UCL (Chen-1995)	56.17
		95% Modified-t UCL (Johnson-1978)	52.53

Nonparametric Distribution Free UCLs

95% CLT UCL	49.2	95% Jackknife UCL	51.44
95% Standard Bootstrap UCL	48.36	95% Bootstrap-t UCL	94.79
95% Hall's Bootstrap UCL	146.9	95% Percentile Bootstrap UCL	50.5
95% BCA Bootstrap UCL	56.16		
90% Chebyshev(Mean, Sd) UCL	63.36	95% Chebyshev(Mean, Sd) UCL	77.55
97.5% Chebyshev(Mean, Sd) UCL	97.26	99% Chebyshev(Mean, Sd) UCL	136

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	43.9	Mean	45.92
Maximum	47.5	Median	45.8
SD	1.146	Std. Error of Mean	0.382
Coefficient of Variation	0.025	Skewness	-0.424
Mean of logged Data	3.827	SD of logged Data	0.0251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.63	95% Adjusted-CLT UCL (Chen-1995)	46.49
		95% Modified-t UCL (Johnson-1978)	46.62

Nonparametric Distribution Free UCLs

95% CLT UCL	46.55	95% Jackknife UCL	46.63
95% Standard Bootstrap UCL	46.5	95% Bootstrap-t UCL	46.57
95% Hall's Bootstrap UCL	46.47	95% Percentile Bootstrap UCL	46.53
95% BCA Bootstrap UCL	46.48		
90% Chebyshev(Mean, Sd) UCL	47.07	95% Chebyshev(Mean, Sd) UCL	47.59
97.5% Chebyshev(Mean, Sd) UCL	48.31	99% Chebyshev(Mean, Sd) UCL	49.72

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.66	Mean	2.258
Maximum	3.39	Median	1.99
SD	0.566	Std. Error of Mean	0.189
Coefficient of Variation	0.251	Skewness	1.018
Mean of logged Data	0.789	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.608	95% Adjusted-CLT UCL (Chen-1995)	2.636
		95% Modified-t UCL (Johnson-1978)	2.619

Nonparametric Distribution Free UCLs

95% CLT UCL	2.568	95% Jackknife UCL	2.608
95% Standard Bootstrap UCL	2.55	95% Bootstrap-t UCL	2.727
95% Hall's Bootstrap UCL	2.621	95% Percentile Bootstrap UCL	2.578
95% BCA Bootstrap UCL	2.613		
90% Chebyshev(Mean, Sd) UCL	2.823	95% Chebyshev(Mean, Sd) UCL	3.08
97.5% Chebyshev(Mean, Sd) UCL	3.435	99% Chebyshev(Mean, Sd) UCL	4.134

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.477	Mean	0.808
Maximum	1.45	Median	0.52
SD	0.382	Std. Error of Mean	0.127
Coefficient of Variation	0.473	Skewness	0.648
Mean of logged Data	-0.309	SD of logged Data	0.46

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.045	95% Adjusted-CLT UCL (Chen-1995)	1.047
		95% Modified-t UCL (Johnson-1978)	1.049

Nonparametric Distribution Free UCLs

95% CLT UCL	1.017	95% Jackknife UCL	1.045
95% Standard Bootstrap UCL	1.004	95% Bootstrap-t UCL	1.097
95% Hall's Bootstrap UCL	0.979	95% Percentile Bootstrap UCL	1.004
95% BCA Bootstrap UCL	1.025		
90% Chebyshev(Mean, Sd) UCL	1.19	95% Chebyshev(Mean, Sd) UCL	1.363
97.5% Chebyshev(Mean, Sd) UCL	1.603	99% Chebyshev(Mean, Sd) UCL	2.074

Suggested UCL to Use

95% Student's-t UCL	1.045	or 95% Modified-t UCL	1.049

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.59	Mean	2.99
Maximum	6.46	Median	2.095
SD	1.946	Std. Error of Mean	0.649
Coefficient of Variation	0.651	Skewness	1.578
Mean of logged Data	0.953	SD of logged Data	0.522

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.196	95% Adjusted-CLT UCL (Chen-1995)	4.421
		95% Modified-t UCL (Johnson-1978)	4.253

Nonparametric Distribution Free UCLs

95% CLT UCL	4.057	95% Jackknife UCL	4.196
95% Standard Bootstrap UCL	4.004	95% Bootstrap-t UCL	12.58
95% Hall's Bootstrap UCL	17.65	95% Percentile Bootstrap UCL	3.998
95% BCA Bootstrap UCL	4.456		
90% Chebyshev(Mean, Sd) UCL	4.936	95% Chebyshev(Mean, Sd) UCL	5.817
97.5% Chebyshev(Mean, Sd) UCL	7.04	99% Chebyshev(Mean, Sd) UCL	9.443

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	5.817

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	16.13
Maximum	43.6	Median	8.24
SD	16.08	Std. Error of Mean	5.36
Coefficient of Variation	0.997	Skewness	0.957
Mean of logged Data	2.233	SD of logged Data	1.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.1	95% Adjusted-CLT UCL (Chen-1995)	26.77
		95% Modified-t UCL (Johnson-1978)	26.38

Nonparametric Distribution Free UCLs

95% CLT UCL	24.94	95% Jackknife UCL	26.1
95% Standard Bootstrap UCL	24.41	95% Bootstrap-t UCL	32.87
95% Hall's Bootstrap UCL	26.88	95% Percentile Bootstrap UCL	24.68
95% BCA Bootstrap UCL	25.89		
90% Chebyshev(Mean, Sd) UCL	32.21	95% Chebyshev(Mean, Sd) UCL	39.49
97.5% Chebyshev(Mean, Sd) UCL	49.6	99% Chebyshev(Mean, Sd) UCL	69.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.105	Mean	22.17
Maximum	54	Median	12.5
SD	21.22	Std. Error of Mean	7.072
Coefficient of Variation	0.957	Skewness	0.708
Mean of logged Data	2.524	SD of logged Data	1.253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.32	95% Adjusted-CLT UCL (Chen-1995)	35.59
		95% Modified-t UCL (Johnson-1978)	35.6

Nonparametric Distribution Free UCLs

95% CLT UCL	33.81	95% Jackknife UCL	35.32
95% Standard Bootstrap UCL	33.14	95% Bootstrap-t UCL	38.26
95% Hall's Bootstrap UCL	33.85	95% Percentile Bootstrap UCL	34.25
95% BCA Bootstrap UCL	34.25		
90% Chebyshev(Mean, Sd) UCL	43.39	95% Chebyshev(Mean, Sd) UCL	53
97.5% Chebyshev(Mean, Sd) UCL	66.34	99% Chebyshev(Mean, Sd) UCL	92.54

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	41.3
Maximum	119	Median	25.6
SD	41.03	Std. Error of Mean	13.68
Coefficient of Variation	0.993	Skewness	0.86
Mean of logged Data	3.04	SD of logged Data	1.411

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	66.73	95% Adjusted-CLT UCL (Chen-1995)	67.99
		95% Modified-t UCL (Johnson-1978)	67.39

Nonparametric Distribution Free UCLs

95% CLT UCL	63.8	95% Jackknife UCL	66.73
95% Standard Bootstrap UCL	62.33	95% Bootstrap-t UCL	77.14
95% Hall's Bootstrap UCL	65.07	95% Percentile Bootstrap UCL	61.86
95% BCA Bootstrap UCL	68.13		
90% Chebyshev(Mean, Sd) UCL	82.33	95% Chebyshev(Mean, Sd) UCL	100.9
97.5% Chebyshev(Mean, Sd) UCL	126.7	99% Chebyshev(Mean, Sd) UCL	177.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	16.6
Maximum	43.9	Median	8.36
SD	15.92	Std. Error of Mean	5.306
Coefficient of Variation	0.959	Skewness	1.008
Mean of logged Data	2.366	SD of logged Data	1.017

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.47	95% Adjusted-CLT UCL (Chen-1995)	27.23
		95% Modified-t UCL (Johnson-1978)	26.76

Nonparametric Distribution Free UCLs

95% CLT UCL	25.33	95% Jackknife UCL	26.47
95% Standard Bootstrap UCL	24.89	95% Bootstrap-t UCL	33.75
95% Hall's Bootstrap UCL	25.96	95% Percentile Bootstrap UCL	25.4
95% BCA Bootstrap UCL	26.98		
90% Chebyshev(Mean, Sd) UCL	32.52	95% Chebyshev(Mean, Sd) UCL	39.73
97.5% Chebyshev(Mean, Sd) UCL	49.74	99% Chebyshev(Mean, Sd) UCL	69.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	11.32
Maximum	27.3	Median	6.02
SD	9.978	Std. Error of Mean	3.326
Coefficient of Variation	0.881	Skewness	0.794
Mean of logged Data	2.021	SD of logged Data	1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.51	95% Adjusted-CLT UCL (Chen-1995)	17.73
		95% Modified-t UCL (Johnson-1978)	17.66

Nonparametric Distribution Free UCLs

95% CLT UCL	16.79	95% Jackknife UCL	17.51
95% Standard Bootstrap UCL	16.62	95% Bootstrap-t UCL	19.46
95% Hall's Bootstrap UCL	16.42	95% Percentile Bootstrap UCL	16.69
95% BCA Bootstrap UCL	16.92		
90% Chebyshev(Mean, Sd) UCL	21.3	95% Chebyshev(Mean, Sd) UCL	25.82
97.5% Chebyshev(Mean, Sd) UCL	32.09	99% Chebyshev(Mean, Sd) UCL	44.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	19.51
Maximum	48.4	Median	11.8
SD	18.31	Std. Error of Mean	6.105
Coefficient of Variation	0.939	Skewness	0.648
Mean of logged Data	2.407	SD of logged Data	1.246

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.86	95% Adjusted-CLT UCL (Chen-1995)	30.96
		95% Modified-t UCL (Johnson-1978)	31.08

Nonparametric Distribution Free UCLs

95% CLT UCL	29.55	95% Jackknife UCL	30.86
95% Standard Bootstrap UCL	28.91	95% Bootstrap-t UCL	34.22
95% Hall's Bootstrap UCL	29.08	95% Percentile Bootstrap UCL	29.21
95% BCA Bootstrap UCL	30.78		
90% Chebyshev(Mean, Sd) UCL	37.83	95% Chebyshev(Mean, Sd) UCL	46.12
97.5% Chebyshev(Mean, Sd) UCL	57.64	99% Chebyshev(Mean, Sd) UCL	80.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.6	Mean	5.603
Maximum	12.2	Median	3.78
SD	3.5	Std. Error of Mean	1.167
Coefficient of Variation	0.625	Skewness	1.22
Mean of logged Data	1.573	SD of logged Data	0.56

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.772	95% Adjusted-CLT UCL (Chen-1995)	8.029
		95% Modified-t UCL (Johnson-1978)	7.851

Nonparametric Distribution Free UCLs

95% CLT UCL	7.522	95% Jackknife UCL	7.772
95% Standard Bootstrap UCL	7.374	95% Bootstrap-t UCL	10.19
95% Hall's Bootstrap UCL	8.783	95% Percentile Bootstrap UCL	7.516
95% BCA Bootstrap UCL	7.872		
90% Chebyshev(Mean, Sd) UCL	9.103	95% Chebyshev(Mean, Sd) UCL	10.69
97.5% Chebyshev(Mean, Sd) UCL	12.89	99% Chebyshev(Mean, Sd) UCL	17.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	24.34
Maximum	63.2	Median	14.6
SD	24.61	Std. Error of Mean	8.203
Coefficient of Variation	1.011	Skewness	0.759
Mean of logged Data	2.477	SD of logged Data	1.447

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.59	95% Adjusted-CLT UCL (Chen-1995)	40.05
		95% Modified-t UCL (Johnson-1978)	39.94

Nonparametric Distribution Free UCLs

95% CLT UCL	37.83	95% Jackknife UCL	39.59
95% Standard Bootstrap UCL	36.98	95% Bootstrap-t UCL	44.22
95% Hall's Bootstrap UCL	37.54	95% Percentile Bootstrap UCL	37.46
95% BCA Bootstrap UCL	38.91		
90% Chebyshev(Mean, Sd) UCL	48.95	95% Chebyshev(Mean, Sd) UCL	60.09
97.5% Chebyshev(Mean, Sd) UCL	75.56	99% Chebyshev(Mean, Sd) UCL	106

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.852	Mean	1.189
Maximum	1.33	Median	1.28
SD	0.181	Std. Error of Mean	0.0602
Coefficient of Variation	0.152	Skewness	-1.467
Mean of logged Data	0.161	SD of logged Data	0.169

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.301	95% Adjusted-CLT UCL (Chen-1995)	1.257
		95% Modified-t UCL (Johnson-1978)	1.296

Nonparametric Distribution Free UCLs

95% CLT UCL	1.288	95% Jackknife UCL	1.301
95% Standard Bootstrap UCL	1.283	95% Bootstrap-t UCL	1.271
95% Hall's Bootstrap UCL	1.256	95% Percentile Bootstrap UCL	1.278
95% BCA Bootstrap UCL	1.268		
90% Chebyshev(Mean, Sd) UCL	1.37	95% Chebyshev(Mean, Sd) UCL	1.451
97.5% Chebyshev(Mean, Sd) UCL	1.565	99% Chebyshev(Mean, Sd) UCL	1.788

Suggested UCL to Use

95% Student's-t UCL	1.301	or 95% Modified-t UCL	1.296

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	19.42
Maximum	53.3	Median	8.89
SD	19.46	Std. Error of Mean	6.486
Coefficient of Variation	1.002	Skewness	1.042
Mean of logged Data	2.472	SD of logged Data	1.082

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.48	95% Adjusted-CLT UCL (Chen-1995)	32.49
		95% Modified-t UCL (Johnson-1978)	31.85

Nonparametric Distribution Free UCLs

95% CLT UCL	30.08	95% Jackknife UCL	31.48
95% Standard Bootstrap UCL	29.6	95% Bootstrap-t UCL	40.61
95% Hall's Bootstrap UCL	31.01	95% Percentile Bootstrap UCL	29.78
95% BCA Bootstrap UCL	32.01		
90% Chebyshev(Mean, Sd) UCL	38.87	95% Chebyshev(Mean, Sd) UCL	47.69
97.5% Chebyshev(Mean, Sd) UCL	59.92	99% Chebyshev(Mean, Sd) UCL	83.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.5	Mean	3.47
Maximum	5.02	Median	3.08
SD	0.933	Std. Error of Mean	0.311
Coefficient of Variation	0.269	Skewness	0.865
Mean of logged Data	1.214	SD of logged Data	0.256

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.048	95% Adjusted-CLT UCL (Chen-1995)	4.077
		95% Modified-t UCL (Johnson-1978)	4.063

Nonparametric Distribution Free UCLs

95% CLT UCL	3.981	95% Jackknife UCL	4.048
95% Standard Bootstrap UCL	3.955	95% Bootstrap-t UCL	4.412
95% Hall's Bootstrap UCL	4.283	95% Percentile Bootstrap UCL	3.979
95% BCA Bootstrap UCL	3.981		
90% Chebyshev(Mean, Sd) UCL	4.403	95% Chebyshev(Mean, Sd) UCL	4.825
97.5% Chebyshev(Mean, Sd) UCL	5.412	99% Chebyshev(Mean, Sd) UCL	6.563

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	9.38
Maximum	21	Median	6.04
SD	7.437	Std. Error of Mean	2.479
Coefficient of Variation	0.793	Skewness	0.818
Mean of logged Data	1.947	SD of logged Data	0.812

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.99	95% Adjusted-CLT UCL (Chen-1995)	14.18
		95% Modified-t UCL (Johnson-1978)	14.1

Nonparametric Distribution Free UCLs

95% CLT UCL	13.46	95% Jackknife UCL	13.99
95% Standard Bootstrap UCL	13.3	95% Bootstrap-t UCL	15.37
95% Hall's Bootstrap UCL	13.55	95% Percentile Bootstrap UCL	13.28
95% BCA Bootstrap UCL	14.07		
90% Chebyshev(Mean, Sd) UCL	16.82	95% Chebyshev(Mean, Sd) UCL	20.19
97.5% Chebyshev(Mean, Sd) UCL	24.86	99% Chebyshev(Mean, Sd) UCL	34.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.98	Mean	25.13
Maximum	64.3	Median	14.7
SD	24.28	Std. Error of Mean	8.093
Coefficient of Variation	0.966	Skewness	0.734
Mean of logged Data	2.637	SD of logged Data	1.263

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.18	95% Adjusted-CLT UCL (Chen-1995)	40.55
		95% Modified-t UCL (Johnson-1978)	40.51

Nonparametric Distribution Free UCLs

95% CLT UCL	38.44	95% Jackknife UCL	40.18
95% Standard Bootstrap UCL	37.64	95% Bootstrap-t UCL	43.87
95% Hall's Bootstrap UCL	36.95	95% Percentile Bootstrap UCL	37.57
95% BCA Bootstrap UCL	40.01		
90% Chebyshev(Mean, Sd) UCL	49.41	95% Chebyshev(Mean, Sd) UCL	60.41
97.5% Chebyshev(Mean, Sd) UCL	75.67	99% Chebyshev(Mean, Sd) UCL	105.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/21/2021 10:39:22 AM
From File	21063J_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.1	Mean	14.43
Maximum	14.8	Median	14.5
SD	0.287	Std. Error of Mean	0.0957
Coefficient of Variation	0.0199	Skewness	-0.145
Mean of logged Data	2.669	SD of logged Data	0.0199

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.61	95% Adjusted-CLT UCL (Chen-1995)	14.59
		95% Modified-t UCL (Johnson-1978)	14.61

Nonparametric Distribution Free UCLs

95% CLT UCL	14.59	95% Jackknife UCL	14.61
95% Standard Bootstrap UCL	14.58	95% Bootstrap-t UCL	14.62
95% Hall's Bootstrap UCL	14.56	95% Percentile Bootstrap UCL	14.57
95% BCA Bootstrap UCL	14.58		
90% Chebyshev(Mean, Sd) UCL	14.72	95% Chebyshev(Mean, Sd) UCL	14.85
97.5% Chebyshev(Mean, Sd) UCL	15.03	99% Chebyshev(Mean, Sd) UCL	15.39

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11	Mean	35.59
Maximum	102	Median	17.4
SD	31.98	Std. Error of Mean	10.66
Coefficient of Variation	0.899	Skewness	1.317

Mean of logged Data	3.237	SD of logged Data	0.852

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.41	95% Adjusted-CLT UCL (Chen-1995)	58.12
		95% Modified-t UCL (Johnson-1978)	56.19

Nonparametric Distribution Free UCLs

95% CLT UCL	53.12	95% Jackknife UCL	55.41
95% Standard Bootstrap UCL	52.04	95% Bootstrap-t UCL	67.4
95% Hall's Bootstrap UCL	53.56	95% Percentile Bootstrap UCL	52.67
95% BCA Bootstrap UCL	58.68		
90% Chebyshev(Mean, Sd) UCL	67.57	95% Chebyshev(Mean, Sd) UCL	82.05
97.5% Chebyshev(Mean, Sd) UCL	102.2	99% Chebyshev(Mean, Sd) UCL	141.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	47.1	Mean	49.39
Maximum	50.8	Median	50.2
SD	1.394	Std. Error of Mean	0.465
Coefficient of Variation	0.0282	Skewness	-0.52
Mean of logged Data	3.899	SD of logged Data	0.0284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.25	95% Adjusted-CLT UCL (Chen-1995)	50.07
		95% Modified-t UCL (Johnson-1978)	50.24

Nonparametric Distribution Free UCLs

95% CLT UCL	50.15	95% Jackknife UCL	50.25
95% Standard Bootstrap UCL	50.1	95% Bootstrap-t UCL	50.17
95% Hall's Bootstrap UCL	50.01	95% Percentile Bootstrap UCL	50.09
95% BCA Bootstrap UCL	50.07		
90% Chebyshev(Mean, Sd) UCL	50.78	95% Chebyshev(Mean, Sd) UCL	51.41
97.5% Chebyshev(Mean, Sd) UCL	52.29	99% Chebyshev(Mean, Sd) UCL	54.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.711	Mean	0.893
Maximum	1.2	Median	0.821
SD	0.193	Std. Error of Mean	0.0643
Coefficient of Variation	0.216	Skewness	0.701
Mean of logged Data	-0.133	SD of logged Data	0.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.012	95% Adjusted-CLT UCL (Chen-1995)	1.015
		95% Modified-t UCL (Johnson-1978)	1.015

Nonparametric Distribution Free UCLs

95% CLT UCL	0.999	95% Jackknife UCL	1.012
95% Standard Bootstrap UCL	0.992	95% Bootstrap-t UCL	1.039
95% Hall's Bootstrap UCL	1.005	95% Percentile Bootstrap UCL	0.994
95% BCA Bootstrap UCL	1.004		
90% Chebyshev(Mean, Sd) UCL	1.086	95% Chebyshev(Mean, Sd) UCL	1.173
97.5% Chebyshev(Mean, Sd) UCL	1.294	99% Chebyshev(Mean, Sd) UCL	1.533

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.331	Mean	0.8
Maximum	1.52	Median	0.525
SD	0.487	Std. Error of Mean	0.162
Coefficient of Variation	0.609	Skewness	0.793
Mean of logged Data	-0.379	SD of logged Data	0.581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.102	95% Adjusted-CLT UCL (Chen-1995)	1.113
		95% Modified-t UCL (Johnson-1978)	1.109

Nonparametric Distribution Free UCLs

95% CLT UCL	1.067	95% Jackknife UCL	1.102
95% Standard Bootstrap UCL	1.058	95% Bootstrap-t UCL	1.148
95% Hall's Bootstrap UCL	0.976	95% Percentile Bootstrap UCL	1.045
95% BCA Bootstrap UCL	1.111		
90% Chebyshev(Mean, Sd) UCL	1.287	95% Chebyshev(Mean, Sd) UCL	1.507
97.5% Chebyshev(Mean, Sd) UCL	1.814	99% Chebyshev(Mean, Sd) UCL	2.415

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.64	Mean	2.775
Maximum	4.52	Median	2.125
SD	1.168	Std. Error of Mean	0.389
Coefficient of Variation	0.421	Skewness	0.85
Mean of logged Data	0.949	SD of logged Data	0.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.499	95% Adjusted-CLT UCL (Chen-1995)	3.533
		95% Modified-t UCL (Johnson-1978)	3.517

Nonparametric Distribution Free UCLs

95% CLT UCL	3.415	95% Jackknife UCL	3.499
95% Standard Bootstrap UCL	3.38	95% Bootstrap-t UCL	3.705
95% Hall's Bootstrap UCL	3.203	95% Percentile Bootstrap UCL	3.399
95% BCA Bootstrap UCL	3.504		
90% Chebyshev(Mean, Sd) UCL	3.943	95% Chebyshev(Mean, Sd) UCL	4.471
97.5% Chebyshev(Mean, Sd) UCL	5.205	99% Chebyshev(Mean, Sd) UCL	6.647

Suggested UCL to Use

95% Student's-t UCL	3.499	or 95% Modified-t UCL	3.517

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.91	Mean	19.86
Maximum	49.1	Median	10.2
SD	20.09	Std. Error of Mean	6.698
Coefficient of Variation	1.012	Skewness	0.7
Mean of logged Data	2.32	SD of logged Data	1.361

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.31	95% Adjusted-CLT UCL (Chen-1995)	32.54
		95% Modified-t UCL (Johnson-1978)	32.57

Nonparametric Distribution Free UCLs

95% CLT UCL	30.87	95% Jackknife UCL	32.31
95% Standard Bootstrap UCL	30.29	95% Bootstrap-t UCL	34.3
95% Hall's Bootstrap UCL	27.68	95% Percentile Bootstrap UCL	30.23
95% BCA Bootstrap UCL	31.69		
90% Chebyshev(Mean, Sd) UCL	39.95	95% Chebyshev(Mean, Sd) UCL	49.05
97.5% Chebyshev(Mean, Sd) UCL	61.68	99% Chebyshev(Mean, Sd) UCL	86.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.395	Mean	28.39
Maximum	70.2	Median	14.8
SD	29.74	Std. Error of Mean	9.914
Coefficient of Variation	1.048	Skewness	0.691
Mean of logged Data	2.527	SD of logged Data	1.581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.83	95% Adjusted-CLT UCL (Chen-1995)	47.14
		95% Modified-t UCL (Johnson-1978)	47.21

Nonparametric Distribution Free UCLs

95% CLT UCL	44.7	95% Jackknife UCL	46.83
95% Standard Bootstrap UCL	43.84	95% Bootstrap-t UCL	49.72
95% Hall's Bootstrap UCL	39.71	95% Percentile Bootstrap UCL	44.99
95% BCA Bootstrap UCL	45.54		
90% Chebyshev(Mean, Sd) UCL	58.14	95% Chebyshev(Mean, Sd) UCL	71.61
97.5% Chebyshev(Mean, Sd) UCL	90.31	99% Chebyshev(Mean, Sd) UCL	127

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.19	Mean	36.93
Maximum	91.2	Median	18.7
SD	37.34	Std. Error of Mean	12.45
Coefficient of Variation	1.011	Skewness	0.719
Mean of logged Data	2.957	SD of logged Data	1.343

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	60.08	95% Adjusted-CLT UCL (Chen-1995)	60.6
		95% Modified-t UCL (Johnson-1978)	60.58

Nonparametric Distribution Free UCLs

95% CLT UCL	57.41	95% Jackknife UCL	60.08
95% Standard Bootstrap UCL	56.24	95% Bootstrap-t UCL	63.34
95% Hall's Bootstrap UCL	51.32	95% Percentile Bootstrap UCL	56.29
95% BCA Bootstrap UCL	59.63		
90% Chebyshev(Mean, Sd) UCL	74.28	95% Chebyshev(Mean, Sd) UCL	91.19
97.5% Chebyshev(Mean, Sd) UCL	114.7	99% Chebyshev(Mean, Sd) UCL	160.8

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.14	Mean	19.49
Maximum	48.1	Median	9.66
SD	19.2	Std. Error of Mean	6.399
Coefficient of Variation	0.985	Skewness	0.768
Mean of logged Data	2.44	SD of logged Data	1.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.39	95% Adjusted-CLT UCL (Chen-1995)	31.77
		95% Modified-t UCL (Johnson-1978)	31.67

Nonparametric Distribution Free UCLs

95% CLT UCL	30.02	95% Jackknife UCL	31.39
95% Standard Bootstrap UCL	29.41	95% Bootstrap-t UCL	33.3
95% Hall's Bootstrap UCL	26.53	95% Percentile Bootstrap UCL	29.23
95% BCA Bootstrap UCL	30.31		
90% Chebyshev(Mean, Sd) UCL	38.69	95% Chebyshev(Mean, Sd) UCL	47.39
97.5% Chebyshev(Mean, Sd) UCL	59.45	99% Chebyshev(Mean, Sd) UCL	83.16

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	14.53
Maximum	35.7	Median	6.9
SD	14.59	Std. Error of Mean	4.862
Coefficient of Variation	1.004	Skewness	0.744
Mean of logged Data	2.099	SD of logged Data	1.21

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.57	95% Adjusted-CLT UCL (Chen-1995)	23.82
		95% Modified-t UCL (Johnson-1978)	23.78

Nonparametric Distribution Free UCLs

95% CLT UCL	22.53	95% Jackknife UCL	23.57
95% Standard Bootstrap UCL	22	95% Bootstrap-t UCL	25.23
95% Hall's Bootstrap UCL	19.96	95% Percentile Bootstrap UCL	22.05
95% BCA Bootstrap UCL	23.1		
90% Chebyshev(Mean, Sd) UCL	29.12	95% Chebyshev(Mean, Sd) UCL	35.73
97.5% Chebyshev(Mean, Sd) UCL	44.9	99% Chebyshev(Mean, Sd) UCL	62.91

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	26.43
Maximum	65.8	Median	13.9
SD	26.99	Std. Error of Mean	8.997
Coefficient of Variation	1.021	Skewness	0.695
Mean of logged Data	2.556	SD of logged Data	1.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.16	95% Adjusted-CLT UCL (Chen-1995)	43.45
		95% Modified-t UCL (Johnson-1978)	43.51

Nonparametric Distribution Free UCLs

95% CLT UCL	41.23	95% Jackknife UCL	43.16
95% Standard Bootstrap UCL	40.27	95% Bootstrap-t UCL	45.78
95% Hall's Bootstrap UCL	37.11	95% Percentile Bootstrap UCL	40.55
95% BCA Bootstrap UCL	41.51		
90% Chebyshev(Mean, Sd) UCL	53.42	95% Chebyshev(Mean, Sd) UCL	65.65
97.5% Chebyshev(Mean, Sd) UCL	82.62	99% Chebyshev(Mean, Sd) UCL	115.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.45	Mean	5.951
Maximum	12.5	Median	3.27
SD	4.387	Std. Error of Mean	1.462
Coefficient of Variation	0.737	Skewness	0.861
Mean of logged Data	1.558	SD of logged Data	0.689

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.671	95% Adjusted-CLT UCL (Chen-1995)	8.805
		95% Modified-t UCL (Johnson-1978)	8.741

Nonparametric Distribution Free UCLs

95% CLT UCL	8.357	95% Jackknife UCL	8.671
95% Standard Bootstrap UCL	8.241	95% Bootstrap-t UCL	9.171
95% Hall's Bootstrap UCL	7.39	95% Percentile Bootstrap UCL	8.153
95% BCA Bootstrap UCL	8.268		
90% Chebyshev(Mean, Sd) UCL	10.34	95% Chebyshev(Mean, Sd) UCL	12.33
97.5% Chebyshev(Mean, Sd) UCL	15.08	99% Chebyshev(Mean, Sd) UCL	20.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.33

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	34.62
Maximum	85.9	Median	18.7
SD	35.47	Std. Error of Mean	11.82
Coefficient of Variation	1.025	Skewness	0.671
Mean of logged Data	2.765	SD of logged Data	1.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.6	95% Adjusted-CLT UCL (Chen-1995)	56.89
		95% Modified-t UCL (Johnson-1978)	57.04

Nonparametric Distribution Free UCLs

95% CLT UCL	54.06	95% Jackknife UCL	56.6
95% Standard Bootstrap UCL	52.88	95% Bootstrap-t UCL	60.19
95% Hall's Bootstrap UCL	49.09	95% Percentile Bootstrap UCL	52.87
95% BCA Bootstrap UCL	57.48		
90% Chebyshev(Mean, Sd) UCL	70.09	95% Chebyshev(Mean, Sd) UCL	86.16
97.5% Chebyshev(Mean, Sd) UCL	108.5	99% Chebyshev(Mean, Sd) UCL	152.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.185	Mean	1.243
Maximum	1.305	Median	1.245
SD	0.0493	Std. Error of Mean	0.0164
Coefficient of Variation	0.0397	Skewness	0.222
Mean of logged Data	0.217	SD of logged Data	0.0395

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.274	95% Adjusted-CLT UCL (Chen-1995)	1.272
		95% Modified-t UCL (Johnson-1978)	1.274

Nonparametric Distribution Free UCLs

95% CLT UCL	1.27	95% Jackknife UCL	1.274
95% Standard Bootstrap UCL	1.269	95% Bootstrap-t UCL	1.275
95% Hall's Bootstrap UCL	1.266	95% Percentile Bootstrap UCL	1.269
95% BCA Bootstrap UCL	1.268		
90% Chebyshev(Mean, Sd) UCL	1.293	95% Chebyshev(Mean, Sd) UCL	1.315
97.5% Chebyshev(Mean, Sd) UCL	1.346	99% Chebyshev(Mean, Sd) UCL	1.407

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8

		Number of Missing Observations	0
Minimum	3.14	Mean	21.81
Maximum	54.9	Median	10.4
SD	22.01	Std. Error of Mean	7.338
Coefficient of Variation	1.01	Skewness	0.789
Mean of logged Data	2.511	SD of logged Data	1.197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.45	95% Adjusted-CLT UCL (Chen-1995)	35.94
		95% Modified-t UCL (Johnson-1978)	35.77

Nonparametric Distribution Free UCLs

95% CLT UCL	33.87	95% Jackknife UCL	35.45
95% Standard Bootstrap UCL	33.48	95% Bootstrap-t UCL	38.71
95% Hall's Bootstrap UCL	30.51	95% Percentile Bootstrap UCL	32.86
95% BCA Bootstrap UCL	35.15		
90% Chebyshev(Mean, Sd) UCL	43.82	95% Chebyshev(Mean, Sd) UCL	53.79
97.5% Chebyshev(Mean, Sd) UCL	67.63	99% Chebyshev(Mean, Sd) UCL	94.81

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	2.368
Maximum	2.92	Median	2.19
SD	0.349	Std. Error of Mean	0.116
Coefficient of Variation	0.147	Skewness	0.617
Mean of logged Data	0.853	SD of logged Data	0.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.584	95% Adjusted-CLT UCL (Chen-1995)	2.585
		95% Modified-t UCL (Johnson-1978)	2.588

Nonparametric Distribution Free UCLs

95% CLT UCL	2.559	95% Jackknife UCL	2.584
95% Standard Bootstrap UCL	2.555	95% Bootstrap-t UCL	2.641

95% Hall's Bootstrap UCL	2.548	95% Percentile Bootstrap UCL	2.548
95% BCA Bootstrap UCL	2.562		
90% Chebyshev(Mean, Sd) UCL	2.717	95% Chebyshev(Mean, Sd) UCL	2.875
97.5% Chebyshev(Mean, Sd) UCL	3.094	99% Chebyshev(Mean, Sd) UCL	3.525

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.14	Mean	12.99
Maximum	29.3	Median	6.73
SD	11.5	Std. Error of Mean	3.834
Coefficient of Variation	0.885	Skewness	0.733
Mean of logged Data	2.173	SD of logged Data	0.955

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.12	95% Adjusted-CLT UCL (Chen-1995)	20.3
		95% Modified-t UCL (Johnson-1978)	20.28

Nonparametric Distribution Free UCLs

95% CLT UCL	19.3	95% Jackknife UCL	20.12
95% Standard Bootstrap UCL	18.89	95% Bootstrap-t UCL	21.29
95% Hall's Bootstrap UCL	17.5	95% Percentile Bootstrap UCL	18.86
95% BCA Bootstrap UCL	19.75		
90% Chebyshev(Mean, Sd) UCL	24.5	95% Chebyshev(Mean, Sd) UCL	29.71
97.5% Chebyshev(Mean, Sd) UCL	36.94	99% Chebyshev(Mean, Sd) UCL	51.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.14	Mean	34.86
Maximum	86.1	Median	18.4
SD	35.35	Std. Error of Mean	11.78

Coefficient of Variation	1.014	Skewness	0.692
Mean of logged Data	2.861	SD of logged Data	1.397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.77	95% Adjusted-CLT UCL (Chen-1995)	57.15
		95% Modified-t UCL (Johnson-1978)	57.22

Nonparametric Distribution Free UCLs

95% CLT UCL	54.24	95% Jackknife UCL	56.77
95% Standard Bootstrap UCL	53.05	95% Bootstrap-t UCL	60.85
95% Hall's Bootstrap UCL	48.96	95% Percentile Bootstrap UCL	53.34
95% BCA Bootstrap UCL	56.46		
90% Chebyshev(Mean, Sd) UCL	70.21	95% Chebyshev(Mean, Sd) UCL	86.23
97.5% Chebyshev(Mean, Sd) UCL	108.5	99% Chebyshev(Mean, Sd) UCL	152.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/20/2021 2:45:22 PM
From File	21063K_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.6	Mean	15.53
Maximum	16.8	Median	15.5
SD	1.076	Std. Error of Mean	0.359
Coefficient of Variation	0.0693	Skewness	-0.576
Mean of logged Data	2.741	SD of logged Data	0.0706

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.2	95% Adjusted-CLT UCL (Chen-1995)	16.05
		95% Modified-t UCL (Johnson-1978)	16.19

Nonparametric Distribution Free UCLs

95% CLT UCL	16.12	95% Jackknife UCL	16.2
95% Standard Bootstrap UCL	16.09	95% Bootstrap-t UCL	16.15
95% Hall's Bootstrap UCL	16.06	95% Percentile Bootstrap UCL	16.06
95% BCA Bootstrap UCL	16.01		
90% Chebyshev(Mean, Sd) UCL	16.61	95% Chebyshev(Mean, Sd) UCL	17.1
97.5% Chebyshev(Mean, Sd) UCL	17.77	99% Chebyshev(Mean, Sd) UCL	19.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12	Mean	56.78
Maximum	132	Median	32.7
SD	46.7	Std. Error of Mean	15.57
Coefficient of Variation	0.823	Skewness	0.607

Mean of logged Data	3.676	SD of logged Data	0.943

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	85.73	95% Adjusted-CLT UCL (Chen-1995)	85.75
		95% Modified-t UCL (Johnson-1978)	86.25

Nonparametric Distribution Free UCLs

95% CLT UCL	82.39	95% Jackknife UCL	85.73
95% Standard Bootstrap UCL	81.28	95% Bootstrap-t UCL	90.41
95% Hall's Bootstrap UCL	78.26	95% Percentile Bootstrap UCL	81.52
95% BCA Bootstrap UCL	83.09		
90% Chebyshev(Mean, Sd) UCL	103.5	95% Chebyshev(Mean, Sd) UCL	124.6
97.5% Chebyshev(Mean, Sd) UCL	154	99% Chebyshev(Mean, Sd) UCL	211.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	45.8	Mean	51.53
Maximum	57	Median	50.1
SD	3.932	Std. Error of Mean	1.311
Coefficient of Variation	0.0763	Skewness	0.338
Mean of logged Data	3.94	SD of logged Data	0.0758

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.97	95% Adjusted-CLT UCL (Chen-1995)	53.85
		95% Modified-t UCL (Johnson-1978)	53.99

Nonparametric Distribution Free UCLs

95% CLT UCL	53.69	95% Jackknife UCL	53.97
95% Standard Bootstrap UCL	53.58	95% Bootstrap-t UCL	54.26
95% Hall's Bootstrap UCL	53.62	95% Percentile Bootstrap UCL	53.59
95% BCA Bootstrap UCL	53.73		
90% Chebyshev(Mean, Sd) UCL	55.46	95% Chebyshev(Mean, Sd) UCL	57.25
97.5% Chebyshev(Mean, Sd) UCL	59.72	99% Chebyshev(Mean, Sd) UCL	64.57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.761	Mean	1.051
Maximum	1.41	Median	0.944
SD	0.258	Std. Error of Mean	0.086
Coefficient of Variation	0.246	Skewness	0.402
Mean of logged Data	0.0229	SD of logged Data	0.243

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.211	95% Adjusted-CLT UCL (Chen-1995)	1.204
		95% Modified-t UCL (Johnson-1978)	1.212

Nonparametric Distribution Free UCLs

95% CLT UCL	1.192	95% Jackknife UCL	1.211
95% Standard Bootstrap UCL	1.187	95% Bootstrap-t UCL	1.24
95% Hall's Bootstrap UCL	1.174	95% Percentile Bootstrap UCL	1.196
95% BCA Bootstrap UCL	1.189		
90% Chebyshev(Mean, Sd) UCL	1.309	95% Chebyshev(Mean, Sd) UCL	1.426
97.5% Chebyshev(Mean, Sd) UCL	1.588	99% Chebyshev(Mean, Sd) UCL	1.907

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.41	Mean	0.668
Maximum	1.08	Median	0.505
SD	0.29	Std. Error of Mean	0.0966
Coefficient of Variation	0.434	Skewness	0.811
Mean of logged Data	-0.48	SD of logged Data	0.405

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.848	95% Adjusted-CLT UCL (Chen-1995)	0.855
		95% Modified-t UCL (Johnson-1978)	0.852

Nonparametric Distribution Free UCLs

95% CLT UCL	0.827	95% Jackknife UCL	0.848
95% Standard Bootstrap UCL	0.821	95% Bootstrap-t UCL	0.878
95% Hall's Bootstrap UCL	0.77	95% Percentile Bootstrap UCL	0.815
95% BCA Bootstrap UCL	0.853		
90% Chebyshev(Mean, Sd) UCL	0.958	95% Chebyshev(Mean, Sd) UCL	1.089
97.5% Chebyshev(Mean, Sd) UCL	1.271	99% Chebyshev(Mean, Sd) UCL	1.629

Suggested UCL to Use

95% Student's-t UCL	0.848	or 95% Modified-t UCL	0.852

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.975	Mean	2.301
Maximum	2.93	Median	2.06
SD	0.391	Std. Error of Mean	0.13
Coefficient of Variation	0.17	Skewness	0.913
Mean of logged Data	0.821	SD of logged Data	0.162

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.543	95% Adjusted-CLT UCL (Chen-1995)	2.557
		95% Modified-t UCL (Johnson-1978)	2.549

Nonparametric Distribution Free UCLs

95% CLT UCL	2.515	95% Jackknife UCL	2.543
95% Standard Bootstrap UCL	2.499	95% Bootstrap-t UCL	2.629
95% Hall's Bootstrap UCL	2.436	95% Percentile Bootstrap UCL	2.512
95% BCA Bootstrap UCL	2.533		
90% Chebyshev(Mean, Sd) UCL	2.691	95% Chebyshev(Mean, Sd) UCL	2.869
97.5% Chebyshev(Mean, Sd) UCL	3.114	99% Chebyshev(Mean, Sd) UCL	3.597

Suggested UCL to Use

95% Student's-t UCL	2.543	or 95% Modified-t UCL	2.549

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	14.51
Maximum	33.1	Median	9.92
SD	13.63	Std. Error of Mean	4.543
Coefficient of Variation	0.94	Skewness	0.566
Mean of logged Data	2.117	SD of logged Data	1.219

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.96	95% Adjusted-CLT UCL (Chen-1995)	22.9
		95% Modified-t UCL (Johnson-1978)	23.1

Nonparametric Distribution Free UCLs

95% CLT UCL	21.98	95% Jackknife UCL	22.96
95% Standard Bootstrap UCL	21.67	95% Bootstrap-t UCL	24.74
95% Hall's Bootstrap UCL	20.1	95% Percentile Bootstrap UCL	22.21
95% BCA Bootstrap UCL	21.85		
90% Chebyshev(Mean, Sd) UCL	28.14	95% Chebyshev(Mean, Sd) UCL	34.31
97.5% Chebyshev(Mean, Sd) UCL	42.88	99% Chebyshev(Mean, Sd) UCL	59.71

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	20.63
Maximum	50.1	Median	14
SD	20.57	Std. Error of Mean	6.855
Coefficient of Variation	0.997	Skewness	0.638
Mean of logged Data	2.353	SD of logged Data	1.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.38	95% Adjusted-CLT UCL (Chen-1995)	33.47
		95% Modified-t UCL (Johnson-1978)	33.62

Nonparametric Distribution Free UCLs

95% CLT UCL	31.91	95% Jackknife UCL	33.38
95% Standard Bootstrap UCL	31.37	95% Bootstrap-t UCL	35.37
95% Hall's Bootstrap UCL	28.95	95% Percentile Bootstrap UCL	30.93
95% BCA Bootstrap UCL	32.76		
90% Chebyshev(Mean, Sd) UCL	41.2	95% Chebyshev(Mean, Sd) UCL	50.51
97.5% Chebyshev(Mean, Sd) UCL	63.44	99% Chebyshev(Mean, Sd) UCL	88.84

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	27.39
Maximum	60.6	Median	22.3
SD	25.98	Std. Error of Mean	8.661
Coefficient of Variation	0.948	Skewness	0.545
Mean of logged Data	2.698	SD of logged Data	1.307

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.5	95% Adjusted-CLT UCL (Chen-1995)	43.32
		95% Modified-t UCL (Johnson-1978)	43.76

Nonparametric Distribution Free UCLs

95% CLT UCL	41.64	95% Jackknife UCL	43.5
95% Standard Bootstrap UCL	41.04	95% Bootstrap-t UCL	46.14
95% Hall's Bootstrap UCL	37.93	95% Percentile Bootstrap UCL	40.35
95% BCA Bootstrap UCL	42.43		
90% Chebyshev(Mean, Sd) UCL	53.38	95% Chebyshev(Mean, Sd) UCL	65.15
97.5% Chebyshev(Mean, Sd) UCL	81.48	99% Chebyshev(Mean, Sd) UCL	113.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	14.97
Maximum	32	Median	10.3
SD	12.99	Std. Error of Mean	4.33
Coefficient of Variation	0.868	Skewness	0.52
Mean of logged Data	2.274	SD of logged Data	1.04

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.02	95% Adjusted-CLT UCL (Chen-1995)	22.9
		95% Modified-t UCL (Johnson-1978)	23.15

Nonparametric Distribution Free UCLs

95% CLT UCL	22.09	95% Jackknife UCL	23.02
95% Standard Bootstrap UCL	21.83	95% Bootstrap-t UCL	25.04
95% Hall's Bootstrap UCL	20.2	95% Percentile Bootstrap UCL	21.63
95% BCA Bootstrap UCL	22.26		
90% Chebyshev(Mean, Sd) UCL	27.96	95% Chebyshev(Mean, Sd) UCL	33.85
97.5% Chebyshev(Mean, Sd) UCL	42.01	99% Chebyshev(Mean, Sd) UCL	58.06

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	11.24
Maximum	24.1	Median	7.47
SD	9.787	Std. Error of Mean	3.262
Coefficient of Variation	0.87	Skewness	0.395
Mean of logged Data	1.947	SD of logged Data	1.108

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.31	95% Adjusted-CLT UCL (Chen-1995)	17.07

		95% Modified-t UCL (Johnson-1978)	17.38

Nonparametric Distribution Free UCLs

95% CLT UCL	16.61	95% Jackknife UCL	17.31
95% Standard Bootstrap UCL	16.23	95% Bootstrap-t UCL	17.98
95% Hall's Bootstrap UCL	15.33	95% Percentile Bootstrap UCL	16.28
95% BCA Bootstrap UCL	16.4		
90% Chebyshev(Mean, Sd) UCL	21.03	95% Chebyshev(Mean, Sd) UCL	25.46
97.5% Chebyshev(Mean, Sd) UCL	31.62	99% Chebyshev(Mean, Sd) UCL	43.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	14.66
Maximum	42.6	Median	6.69
SD	16.52	Std. Error of Mean	5.506
Coefficient of Variation	1.127	Skewness	1.13
Mean of logged Data	1.99	SD of logged Data	1.312

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.89	95% Adjusted-CLT UCL (Chen-1995)	25.93
		95% Modified-t UCL (Johnson-1978)	25.24

Nonparametric Distribution Free UCLs

95% CLT UCL	23.71	95% Jackknife UCL	24.89
95% Standard Bootstrap UCL	23.32	95% Bootstrap-t UCL	35.07
95% Hall's Bootstrap UCL	34.32	95% Percentile Bootstrap UCL	23.48
95% BCA Bootstrap UCL	25.25		
90% Chebyshev(Mean, Sd) UCL	31.17	95% Chebyshev(Mean, Sd) UCL	38.66
97.5% Chebyshev(Mean, Sd) UCL	49.04	99% Chebyshev(Mean, Sd) UCL	69.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.39	Mean	5.567
Maximum	10.5	Median	3.25
SD	3.126	Std. Error of Mean	1.042
Coefficient of Variation	0.562	Skewness	0.476
Mean of logged Data	1.571	SD of logged Data	0.574

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.505	95% Adjusted-CLT UCL (Chen-1995)	7.458
		95% Modified-t UCL (Johnson-1978)	7.533

Nonparametric Distribution Free UCLs

95% CLT UCL	7.281	95% Jackknife UCL	7.505
95% Standard Bootstrap UCL	7.151	95% Bootstrap-t UCL	7.637
95% Hall's Bootstrap UCL	6.881	95% Percentile Bootstrap UCL	7.116
95% BCA Bootstrap UCL	7.212		
90% Chebyshev(Mean, Sd) UCL	8.693	95% Chebyshev(Mean, Sd) UCL	10.11
97.5% Chebyshev(Mean, Sd) UCL	12.08	99% Chebyshev(Mean, Sd) UCL	15.94

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.11

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	22.86
Maximum	56.2	Median	14.2
SD	23.99	Std. Error of Mean	7.997
Coefficient of Variation	1.049	Skewness	0.713
Mean of logged Data	2.397	SD of logged Data	1.427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.73	95% Adjusted-CLT UCL (Chen-1995)	38.05
		95% Modified-t UCL (Johnson-1978)	38.05

Nonparametric Distribution Free UCLs

95% CLT UCL	36.02	95% Jackknife UCL	37.73

95% Standard Bootstrap UCL	35.05	95% Bootstrap-t UCL	39.63
95% Hall's Bootstrap UCL	32	95% Percentile Bootstrap UCL	35.47
95% BCA Bootstrap UCL	38.43		
90% Chebyshev(Mean, Sd) UCL	46.85	95% Chebyshev(Mean, Sd) UCL	57.72
97.5% Chebyshev(Mean, Sd) UCL	72.8	99% Chebyshev(Mean, Sd) UCL	102.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.215	Mean	1.277
Maximum	1.325	Median	1.27
SD	0.0363	Std. Error of Mean	0.0121
Coefficient of Variation	0.0284	Skewness	-0.292
Mean of logged Data	0.244	SD of logged Data	0.0285

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.3	95% Adjusted-CLT UCL (Chen-1995)	1.296
		95% Modified-t UCL (Johnson-1978)	1.3

Nonparametric Distribution Free UCLs

95% CLT UCL	1.297	95% Jackknife UCL	1.3
95% Standard Bootstrap UCL	1.296	95% Bootstrap-t UCL	1.299
95% Hall's Bootstrap UCL	1.295	95% Percentile Bootstrap UCL	1.296
95% BCA Bootstrap UCL	1.296		
90% Chebyshev(Mean, Sd) UCL	1.314	95% Chebyshev(Mean, Sd) UCL	1.33
97.5% Chebyshev(Mean, Sd) UCL	1.353	99% Chebyshev(Mean, Sd) UCL	1.398

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	3.12	Mean	16.78
Maximum	37.6	Median	11.5
SD	15.07	Std. Error of Mean	5.024
Coefficient of Variation	0.898	Skewness	0.56
Mean of logged Data	2.348	SD of logged Data	1.095

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.12	95% Adjusted-CLT UCL (Chen-1995)	26.05
		95% Modified-t UCL (Johnson-1978)	26.28

Nonparametric Distribution Free UCLs

95% CLT UCL	25.04	95% Jackknife UCL	26.12
95% Standard Bootstrap UCL	24.64	95% Bootstrap-t UCL	27.48
95% Hall's Bootstrap UCL	23.03	95% Percentile Bootstrap UCL	25.22
95% BCA Bootstrap UCL	25.45		
90% Chebyshev(Mean, Sd) UCL	31.85	95% Chebyshev(Mean, Sd) UCL	38.68
97.5% Chebyshev(Mean, Sd) UCL	48.16	99% Chebyshev(Mean, Sd) UCL	66.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.09	Mean	2.722
Maximum	3.56	Median	2.34
SD	0.596	Std. Error of Mean	0.199
Coefficient of Variation	0.219	Skewness	0.327
Mean of logged Data	0.98	SD of logged Data	0.217

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.091	95% Adjusted-CLT UCL (Chen-1995)	3.072
		95% Modified-t UCL (Johnson-1978)	3.095

Nonparametric Distribution Free UCLs

95% CLT UCL	3.049	95% Jackknife UCL	3.091
95% Standard Bootstrap UCL	3.022	95% Bootstrap-t UCL	3.092

95% Hall's Bootstrap UCL	2.96	95% Percentile Bootstrap UCL	3.032
95% BCA Bootstrap UCL	3.057		
90% Chebyshev(Mean, Sd) UCL	3.318	95% Chebyshev(Mean, Sd) UCL	3.588
97.5% Chebyshev(Mean, Sd) UCL	3.962	99% Chebyshev(Mean, Sd) UCL	4.698

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.78	Mean	8.687
Maximum	19.3	Median	4.39
SD	7.475	Std. Error of Mean	2.492
Coefficient of Variation	0.86	Skewness	0.816
Mean of logged Data	1.832	SD of logged Data	0.845

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.32	95% Adjusted-CLT UCL (Chen-1995)	13.51
		95% Modified-t UCL (Johnson-1978)	13.43

Nonparametric Distribution Free UCLs

95% CLT UCL	12.79	95% Jackknife UCL	13.32
95% Standard Bootstrap UCL	12.53	95% Bootstrap-t UCL	14.12
95% Hall's Bootstrap UCL	11.25	95% Percentile Bootstrap UCL	12.53
95% BCA Bootstrap UCL	13.27		
90% Chebyshev(Mean, Sd) UCL	16.16	95% Chebyshev(Mean, Sd) UCL	19.55
97.5% Chebyshev(Mean, Sd) UCL	24.25	99% Chebyshev(Mean, Sd) UCL	33.48

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	23.53
Maximum	56.5	Median	15.1
SD	23.78	Std. Error of Mean	7.927

Coefficient of Variation	1.011	Skewness	0.723
Mean of logged Data	2.555	SD of logged Data	1.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.27	95% Adjusted-CLT UCL (Chen-1995)	38.61
		95% Modified-t UCL (Johnson-1978)	38.59

Nonparametric Distribution Free UCLs

95% CLT UCL	36.57	95% Jackknife UCL	38.27
95% Standard Bootstrap UCL	35.74	95% Bootstrap-t UCL	40.37
95% Hall's Bootstrap UCL	32.32	95% Percentile Bootstrap UCL	35.73
95% BCA Bootstrap UCL	37.47		
90% Chebyshev(Mean, Sd) UCL	47.31	95% Chebyshev(Mean, Sd) UCL	58.08
97.5% Chebyshev(Mean, Sd) UCL	73.04	99% Chebyshev(Mean, Sd) UCL	102.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:37:37 AM
From File	21078A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.8	Mean	13.43
Maximum	14.8	Median	13.7
SD	1.086	Std. Error of Mean	0.362
Coefficient of Variation	0.0809	Skewness	-0.235
Mean of logged Data	2.595	SD of logged Data	0.0817

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.11	95% Adjusted-CLT UCL (Chen-1995)	14
		95% Modified-t UCL (Johnson-1978)	14.1

Nonparametric Distribution Free UCLs

95% CLT UCL	14.03	95% Jackknife UCL	14.11
95% Standard Bootstrap UCL	13.98	95% Bootstrap-t UCL	14.04
95% Hall's Bootstrap UCL	13.93	95% Percentile Bootstrap UCL	14
95% BCA Bootstrap UCL	13.96		
90% Chebyshev(Mean, Sd) UCL	14.52	95% Chebyshev(Mean, Sd) UCL	15.01
97.5% Chebyshev(Mean, Sd) UCL	15.69	99% Chebyshev(Mean, Sd) UCL	17.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.5	Mean	50.19
Maximum	129	Median	39.3
SD	39.09	Std. Error of Mean	13.03
Coefficient of Variation	0.779	Skewness	0.98

Mean of logged Data	3.599	SD of logged Data	0.898

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	74.42	95% Adjusted-CLT UCL (Chen-1995)	76.17
		95% Modified-t UCL (Johnson-1978)	75.13

Nonparametric Distribution Free UCLs

95% CLT UCL	71.62	95% Jackknife UCL	74.42
95% Standard Bootstrap UCL	70.16	95% Bootstrap-t UCL	79.64
95% Hall's Bootstrap UCL	80.11	95% Percentile Bootstrap UCL	71.1
95% BCA Bootstrap UCL	74.17		
90% Chebyshev(Mean, Sd) UCL	89.28	95% Chebyshev(Mean, Sd) UCL	107
97.5% Chebyshev(Mean, Sd) UCL	131.6	99% Chebyshev(Mean, Sd) UCL	179.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	41.7	Mean	47.58
Maximum	51.8	Median	47.3
SD	2.981	Std. Error of Mean	0.994
Coefficient of Variation	0.0626	Skewness	-0.655
Mean of logged Data	3.861	SD of logged Data	0.0639

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.43	95% Adjusted-CLT UCL (Chen-1995)	48.98
		95% Modified-t UCL (Johnson-1978)	49.39

Nonparametric Distribution Free UCLs

95% CLT UCL	49.21	95% Jackknife UCL	49.43
95% Standard Bootstrap UCL	49.13	95% Bootstrap-t UCL	49.28
95% Hall's Bootstrap UCL	49.04	95% Percentile Bootstrap UCL	49.07
95% BCA Bootstrap UCL	48.88		
90% Chebyshev(Mean, Sd) UCL	50.56	95% Chebyshev(Mean, Sd) UCL	51.91
97.5% Chebyshev(Mean, Sd) UCL	53.78	99% Chebyshev(Mean, Sd) UCL	57.46

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.649	Mean	1.038
Maximum	1.71	Median	0.935
SD	0.361	Std. Error of Mean	0.12
Coefficient of Variation	0.348	Skewness	1.206
Mean of logged Data	-0.0102	SD of logged Data	0.319

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.262	95% Adjusted-CLT UCL (Chen-1995)	1.288
		95% Modified-t UCL (Johnson-1978)	1.27

Nonparametric Distribution Free UCLs

95% CLT UCL	1.236	95% Jackknife UCL	1.262
95% Standard Bootstrap UCL	1.223	95% Bootstrap-t UCL	1.546
95% Hall's Bootstrap UCL	2.939	95% Percentile Bootstrap UCL	1.234
95% BCA Bootstrap UCL	1.254		
90% Chebyshev(Mean, Sd) UCL	1.4	95% Chebyshev(Mean, Sd) UCL	1.563
97.5% Chebyshev(Mean, Sd) UCL	1.791	99% Chebyshev(Mean, Sd) UCL	2.237

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.385	Mean	1.038
Maximum	4.55	Median	0.499
SD	1.335	Std. Error of Mean	0.445
Coefficient of Variation	1.286	Skewness	2.848
Mean of logged Data	-0.338	SD of logged Data	0.767

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.866	95% Adjusted-CLT UCL (Chen-1995)	2.222
		95% Modified-t UCL (Johnson-1978)	1.937

Nonparametric Distribution Free UCLs

95% CLT UCL	1.771	95% Jackknife UCL	1.866
95% Standard Bootstrap UCL	1.738	95% Bootstrap-t UCL	5.688
95% Hall's Bootstrap UCL	5.345	95% Percentile Bootstrap UCL	1.879
95% BCA Bootstrap UCL	2.289		
90% Chebyshev(Mean, Sd) UCL	2.374	95% Chebyshev(Mean, Sd) UCL	2.979
97.5% Chebyshev(Mean, Sd) UCL	3.818	99% Chebyshev(Mean, Sd) UCL	5.468

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.979

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.3	Mean	3.411
Maximum	12.7	Median	2.12
SD	3.541	Std. Error of Mean	1.18
Coefficient of Variation	1.038	Skewness	2.819
Mean of logged Data	0.968	SD of logged Data	0.653

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.606	95% Adjusted-CLT UCL (Chen-1995)	6.538
		95% Modified-t UCL (Johnson-1978)	5.791

Nonparametric Distribution Free UCLs

95% CLT UCL	5.353	95% Jackknife UCL	5.606
95% Standard Bootstrap UCL	5.226	95% Bootstrap-t UCL	13.23
95% Hall's Bootstrap UCL	12.64	95% Percentile Bootstrap UCL	5.678
95% BCA Bootstrap UCL	6.957		
90% Chebyshev(Mean, Sd) UCL	6.952	95% Chebyshev(Mean, Sd) UCL	8.556
97.5% Chebyshev(Mean, Sd) UCL	10.78	99% Chebyshev(Mean, Sd) UCL	15.16

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.556

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	17
Maximum	55.7	Median	8.2
SD	18.71	Std. Error of Mean	6.237
Coefficient of Variation	1.101	Skewness	1.294
Mean of logged Data	2.179	SD of logged Data	1.299

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.6	95% Adjusted-CLT UCL (Chen-1995)	30.13
		95% Modified-t UCL (Johnson-1978)	29.05

Nonparametric Distribution Free UCLs

95% CLT UCL	27.26	95% Jackknife UCL	28.6
95% Standard Bootstrap UCL	26.57	95% Bootstrap-t UCL	35.66
95% Hall's Bootstrap UCL	27.71	95% Percentile Bootstrap UCL	27.19
95% BCA Bootstrap UCL	29.41		
90% Chebyshev(Mean, Sd) UCL	35.71	95% Chebyshev(Mean, Sd) UCL	44.18
97.5% Chebyshev(Mean, Sd) UCL	55.95	99% Chebyshev(Mean, Sd) UCL	79.06

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	24.54
Maximum	76.2	Median	12.3
SD	26.96	Std. Error of Mean	8.985
Coefficient of Variation	1.098	Skewness	1.065
Mean of logged Data	2.444	SD of logged Data	1.454

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.25	95% Adjusted-CLT UCL (Chen-1995)	42.73
		95% Modified-t UCL (Johnson-1978)	41.78

Nonparametric Distribution Free UCLs

95% CLT UCL	39.32	95% Jackknife UCL	41.25
95% Standard Bootstrap UCL	38.53	95% Bootstrap-t UCL	47.09
95% Hall's Bootstrap UCL	37.78	95% Percentile Bootstrap UCL	39
95% BCA Bootstrap UCL	41.17		
90% Chebyshev(Mean, Sd) UCL	51.5	95% Chebyshev(Mean, Sd) UCL	63.71
97.5% Chebyshev(Mean, Sd) UCL	80.65	99% Chebyshev(Mean, Sd) UCL	113.9

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	31.85
Maximum	95.8	Median	17
SD	33.89	Std. Error of Mean	11.3
Coefficient of Variation	1.064	Skewness	1.011
Mean of logged Data	2.761	SD of logged Data	1.389

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.85	95% Adjusted-CLT UCL (Chen-1995)	54.5
		95% Modified-t UCL (Johnson-1978)	53.49

Nonparametric Distribution Free UCLs

95% CLT UCL	50.43	95% Jackknife UCL	52.85
95% Standard Bootstrap UCL	49.83	95% Bootstrap-t UCL	59.69
95% Hall's Bootstrap UCL	48.29	95% Percentile Bootstrap UCL	49.98
95% BCA Bootstrap UCL	53.03		
90% Chebyshev(Mean, Sd) UCL	65.74	95% Chebyshev(Mean, Sd) UCL	81.09
97.5% Chebyshev(Mean, Sd) UCL	102.4	99% Chebyshev(Mean, Sd) UCL	144.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	19.44
Maximum	57.1	Median	10.1
SD	19.82	Std. Error of Mean	6.605
Coefficient of Variation	1.019	Skewness	1.048
Mean of logged Data	2.42	SD of logged Data	1.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.73	95% Adjusted-CLT UCL (Chen-1995)	32.77
		95% Modified-t UCL (Johnson-1978)	32.11

Nonparametric Distribution Free UCLs

95% CLT UCL	30.31	95% Jackknife UCL	31.73
95% Standard Bootstrap UCL	29.6	95% Bootstrap-t UCL	36.98
95% Hall's Bootstrap UCL	28.74	95% Percentile Bootstrap UCL	29.8
95% BCA Bootstrap UCL	30.83		
90% Chebyshev(Mean, Sd) UCL	39.26	95% Chebyshev(Mean, Sd) UCL	48.24
97.5% Chebyshev(Mean, Sd) UCL	60.69	99% Chebyshev(Mean, Sd) UCL	85.17

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	12.52
Maximum	39.9	Median	6.18
SD	13.39	Std. Error of Mean	4.464
Coefficient of Variation	1.069	Skewness	1.267
Mean of logged Data	1.961	SD of logged Data	1.168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.83	95% Adjusted-CLT UCL (Chen-1995)	21.88
		95% Modified-t UCL (Johnson-1978)	21.14

Nonparametric Distribution Free UCLs

95% CLT UCL	19.87	95% Jackknife UCL	20.83
95% Standard Bootstrap UCL	19.52	95% Bootstrap-t UCL	24.97
95% Hall's Bootstrap UCL	19.48	95% Percentile Bootstrap UCL	19.86
95% BCA Bootstrap UCL	21.9		
90% Chebyshev(Mean, Sd) UCL	25.92	95% Chebyshev(Mean, Sd) UCL	31.98
97.5% Chebyshev(Mean, Sd) UCL	40.4	99% Chebyshev(Mean, Sd) UCL	56.94

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	22
Maximum	67.6	Median	11.5
SD	23.67	Std. Error of Mean	7.891
Coefficient of Variation	1.076	Skewness	1.058
Mean of logged Data	2.367	SD of logged Data	1.423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.68	95% Adjusted-CLT UCL (Chen-1995)	37.96
		95% Modified-t UCL (Johnson-1978)	37.14

Nonparametric Distribution Free UCLs

95% CLT UCL	34.98	95% Jackknife UCL	36.68
95% Standard Bootstrap UCL	34.11	95% Bootstrap-t UCL	42.47
95% Hall's Bootstrap UCL	34.13	95% Percentile Bootstrap UCL	34.57
95% BCA Bootstrap UCL	38.26		
90% Chebyshev(Mean, Sd) UCL	45.68	95% Chebyshev(Mean, Sd) UCL	56.4
97.5% Chebyshev(Mean, Sd) UCL	71.28	99% Chebyshev(Mean, Sd) UCL	100.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	6.02
Maximum	14.8	Median	3.28
SD	4.403	Std. Error of Mean	1.468
Coefficient of Variation	0.731	Skewness	1.259
Mean of logged Data	1.592	SD of logged Data	0.643

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.749	95% Adjusted-CLT UCL (Chen-1995)	9.092
		95% Modified-t UCL (Johnson-1978)	8.852

Nonparametric Distribution Free UCLs

95% CLT UCL	8.434	95% Jackknife UCL	8.749
95% Standard Bootstrap UCL	8.201	95% Bootstrap-t UCL	10.16
95% Hall's Bootstrap UCL	7.839	95% Percentile Bootstrap UCL	8.531
95% BCA Bootstrap UCL	8.863		
90% Chebyshev(Mean, Sd) UCL	10.42	95% Chebyshev(Mean, Sd) UCL	12.42
97.5% Chebyshev(Mean, Sd) UCL	15.19	99% Chebyshev(Mean, Sd) UCL	20.62

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.42

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	30.76
Maximum	112	Median	14.7
SD	36.78	Std. Error of Mean	12.26
Coefficient of Variation	1.196	Skewness	1.562
Mean of logged Data	2.603	SD of logged Data	1.52

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.56	95% Adjusted-CLT UCL (Chen-1995)	57.75
		95% Modified-t UCL (Johnson-1978)	54.63

Nonparametric Distribution Free UCLs

95% CLT UCL	50.93	95% Jackknife UCL	53.56
95% Standard Bootstrap UCL	49.7	95% Bootstrap-t UCL	68.69
95% Hall's Bootstrap UCL	56.9	95% Percentile Bootstrap UCL	51.24
95% BCA Bootstrap UCL	55.09		
90% Chebyshev(Mean, Sd) UCL	67.55	95% Chebyshev(Mean, Sd) UCL	84.21
97.5% Chebyshev(Mean, Sd) UCL	107.3	99% Chebyshev(Mean, Sd) UCL	152.8

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.19	Mean	1.427
Maximum	2.89	Median	1.245
SD	0.551	Std. Error of Mean	0.184
Coefficient of Variation	0.386	Skewness	2.962
Mean of logged Data	0.311	SD of logged Data	0.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.768	95% Adjusted-CLT UCL (Chen-1995)	1.922
		95% Modified-t UCL (Johnson-1978)	1.798

Nonparametric Distribution Free UCLs

95% CLT UCL	1.729	95% Jackknife UCL	1.768
95% Standard Bootstrap UCL	1.711	95% Bootstrap-t UCL	4.22
95% Hall's Bootstrap UCL	3.387	95% Percentile Bootstrap UCL	1.787
95% BCA Bootstrap UCL	1.975		
90% Chebyshev(Mean, Sd) UCL	1.977	95% Chebyshev(Mean, Sd) UCL	2.227
97.5% Chebyshev(Mean, Sd) UCL	2.573	99% Chebyshev(Mean, Sd) UCL	3.253

Suggested UCL to Use

95% Student's-t UCL	1.768	or 95% Modified-t UCL	1.798

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	2.975	Mean	21.56
Maximum	65.9	Median	11.5
SD	22.42	Std. Error of Mean	7.472
Coefficient of Variation	1.04	Skewness	1.153
Mean of logged Data	2.495	SD of logged Data	1.207

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.45	95% Adjusted-CLT UCL (Chen-1995)	36.92
		95% Modified-t UCL (Johnson-1978)	35.93

Nonparametric Distribution Free UCLs

95% CLT UCL	33.85	95% Jackknife UCL	35.45
95% Standard Bootstrap UCL	32.91	95% Bootstrap-t UCL	42.7
95% Hall's Bootstrap UCL	33.97	95% Percentile Bootstrap UCL	34.43
95% BCA Bootstrap UCL	36.57		
90% Chebyshev(Mean, Sd) UCL	43.97	95% Chebyshev(Mean, Sd) UCL	54.13
97.5% Chebyshev(Mean, Sd) UCL	68.22	99% Chebyshev(Mean, Sd) UCL	95.9

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.28	Mean	1.602
Maximum	3.07	Median	1.43
SD	0.561	Std. Error of Mean	0.187
Coefficient of Variation	0.35	Skewness	2.785
Mean of logged Data	0.433	SD of logged Data	0.269

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.95	95% Adjusted-CLT UCL (Chen-1995)	2.096
		95% Modified-t UCL (Johnson-1978)	1.979

Nonparametric Distribution Free UCLs

95% CLT UCL	1.91	95% Jackknife UCL	1.95
95% Standard Bootstrap UCL	1.892	95% Bootstrap-t UCL	3.184

95% Hall's Bootstrap UCL	3.37	95% Percentile Bootstrap UCL	1.95
95% BCA Bootstrap UCL	2.131		
90% Chebyshev(Mean, Sd) UCL	2.164	95% Chebyshev(Mean, Sd) UCL	2.418
97.5% Chebyshev(Mean, Sd) UCL	2.771	99% Chebyshev(Mean, Sd) UCL	3.464

Suggested UCL to Use

95% Student's-t UCL	1.95	or 95% Modified-t UCL	1.979

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	14.31
Maximum	61.7	Median	5.77
SD	18.94	Std. Error of Mean	6.314
Coefficient of Variation	1.324	Skewness	2.385
Mean of logged Data	2.102	SD of logged Data	1.048

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.05	95% Adjusted-CLT UCL (Chen-1995)	30.06
		95% Modified-t UCL (Johnson-1978)	26.89

Nonparametric Distribution Free UCLs

95% CLT UCL	24.7	95% Jackknife UCL	26.05
95% Standard Bootstrap UCL	24.13	95% Bootstrap-t UCL	43.94
95% Hall's Bootstrap UCL	56.94	95% Percentile Bootstrap UCL	25.27
95% BCA Bootstrap UCL	30.89		
90% Chebyshev(Mean, Sd) UCL	33.25	95% Chebyshev(Mean, Sd) UCL	41.83
97.5% Chebyshev(Mean, Sd) UCL	53.74	99% Chebyshev(Mean, Sd) UCL	77.13

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.52	Mean	29.86
Maximum	102	Median	15
SD	33.94	Std. Error of Mean	11.31

Coefficient of Variation	1.137	Skewness	1.394
Mean of logged Data	2.675	SD of logged Data	1.391

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.89	95% Adjusted-CLT UCL (Chen-1995)	54.08
		95% Modified-t UCL (Johnson-1978)	51.77

Nonparametric Distribution Free UCLs

95% CLT UCL	48.47	95% Jackknife UCL	50.89
95% Standard Bootstrap UCL	47.28	95% Bootstrap-t UCL	62.04
95% Hall's Bootstrap UCL	51.37	95% Percentile Bootstrap UCL	49.3
95% BCA Bootstrap UCL	53.47		
90% Chebyshev(Mean, Sd) UCL	63.8	95% Chebyshev(Mean, Sd) UCL	79.17
97.5% Chebyshev(Mean, Sd) UCL	100.5	99% Chebyshev(Mean, Sd) UCL	142.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:39:05 AM
From File	21078B_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.24	Mean	12.78
Maximum	14.6	Median	12.8
SD	1.532	Std. Error of Mean	0.511
Coefficient of Variation	0.12	Skewness	-1.599
Mean of logged Data	2.541	SD of logged Data	0.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.73	95% Adjusted-CLT UCL (Chen-1995)	13.33
		95% Modified-t UCL (Johnson-1978)	13.69

Nonparametric Distribution Free UCLs

95% CLT UCL	13.62	95% Jackknife UCL	13.73
95% Standard Bootstrap UCL	13.58	95% Bootstrap-t UCL	13.49
95% Hall's Bootstrap UCL	13.46	95% Percentile Bootstrap UCL	13.48
95% BCA Bootstrap UCL	13.38		
90% Chebyshev(Mean, Sd) UCL	14.31	95% Chebyshev(Mean, Sd) UCL	15.01
97.5% Chebyshev(Mean, Sd) UCL	15.97	99% Chebyshev(Mean, Sd) UCL	17.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.9	Mean	70.82
Maximum	322	Median	35.6
SD	99.32	Std. Error of Mean	33.11
Coefficient of Variation	1.402	Skewness	2.488

Mean of logged Data	3.65	SD of logged Data	1.096

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	132.4	95% Adjusted-CLT UCL (Chen-1995)	154.6
		95% Modified-t UCL (Johnson-1978)	137

Nonparametric Distribution Free UCLs

95% CLT UCL	125.3	95% Jackknife UCL	132.4
95% Standard Bootstrap UCL	122.9	95% Bootstrap-t UCL	307.9
95% Hall's Bootstrap UCL	359.6	95% Percentile Bootstrap UCL	129.5
95% BCA Bootstrap UCL	156.3		
90% Chebyshev(Mean, Sd) UCL	170.1	95% Chebyshev(Mean, Sd) UCL	215.1
97.5% Chebyshev(Mean, Sd) UCL	277.6	99% Chebyshev(Mean, Sd) UCL	400.2

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	34.3	Mean	47.69
Maximum	53.9	Median	49.3
SD	5.678	Std. Error of Mean	1.893
Coefficient of Variation	0.119	Skewness	-1.836
Mean of logged Data	3.857	SD of logged Data	0.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.21	95% Adjusted-CLT UCL (Chen-1995)	49.56
		95% Modified-t UCL (Johnson-1978)	51.02

Nonparametric Distribution Free UCLs

95% CLT UCL	50.8	95% Jackknife UCL	51.21
95% Standard Bootstrap UCL	50.64	95% Bootstrap-t UCL	50.31
95% Hall's Bootstrap UCL	49.93	95% Percentile Bootstrap UCL	50.27
95% BCA Bootstrap UCL	49.84		
90% Chebyshev(Mean, Sd) UCL	53.37	95% Chebyshev(Mean, Sd) UCL	55.94
97.5% Chebyshev(Mean, Sd) UCL	59.51	99% Chebyshev(Mean, Sd) UCL	66.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.725	Mean	0.896
Maximum	1.05	Median	0.92
SD	0.103	Std. Error of Mean	0.0343
Coefficient of Variation	0.115	Skewness	-0.302
Mean of logged Data	-0.116	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.96	95% Adjusted-CLT UCL (Chen-1995)	0.949
		95% Modified-t UCL (Johnson-1978)	0.959

Nonparametric Distribution Free UCLs

95% CLT UCL	0.953	95% Jackknife UCL	0.96
95% Standard Bootstrap UCL	0.95	95% Bootstrap-t UCL	0.952
95% Hall's Bootstrap UCL	0.95	95% Percentile Bootstrap UCL	0.949
95% BCA Bootstrap UCL	0.948		
90% Chebyshev(Mean, Sd) UCL	0.999	95% Chebyshev(Mean, Sd) UCL	1.046
97.5% Chebyshev(Mean, Sd) UCL	1.11	99% Chebyshev(Mean, Sd) UCL	1.237

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.318	Mean	0.678
Maximum	1.25	Median	0.53

SD	0.309	Std. Error of Mean	0.103
Coefficient of Variation	0.455	Skewness	0.924
Mean of logged Data	-0.476	SD of logged Data	0.436

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.869	95% Adjusted-CLT UCL (Chen-1995)	0.881
		95% Modified-t UCL (Johnson-1978)	0.874

Nonparametric Distribution Free UCLs

95% CLT UCL	0.847	95% Jackknife UCL	0.869
95% Standard Bootstrap UCL	0.837	95% Bootstrap-t UCL	0.927
95% Hall's Bootstrap UCL	0.839	95% Percentile Bootstrap UCL	0.845
95% BCA Bootstrap UCL	0.861		
90% Chebyshev(Mean, Sd) UCL	0.986	95% Chebyshev(Mean, Sd) UCL	1.126
97.5% Chebyshev(Mean, Sd) UCL	1.32	99% Chebyshev(Mean, Sd) UCL	1.701

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	2.458
Maximum	4.01	Median	2.15
SD	0.692	Std. Error of Mean	0.231
Coefficient of Variation	0.282	Skewness	1.691
Mean of logged Data	0.87	SD of logged Data	0.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.887	95% Adjusted-CLT UCL (Chen-1995)	2.977
		95% Modified-t UCL (Johnson-1978)	2.909

Nonparametric Distribution Free UCLs

95% CLT UCL	2.838	95% Jackknife UCL	2.887
95% Standard Bootstrap UCL	2.815	95% Bootstrap-t UCL	3.299
95% Hall's Bootstrap UCL	2.988	95% Percentile Bootstrap UCL	2.826
95% BCA Bootstrap UCL	2.914		
90% Chebyshev(Mean, Sd) UCL	3.151	95% Chebyshev(Mean, Sd) UCL	3.464

97.5% Chebyshev(Mean, Sd) UCL	3.9	99% Chebyshev(Mean, Sd) UCL	4.754

Suggested UCL to Use

95% Student's-t UCL	2.887	or 95% Modified-t UCL	2.909

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	15.21
Maximum	40.4	Median	8.2
SD	14.38	Std. Error of Mean	4.794
Coefficient of Variation	0.946	Skewness	0.797
Mean of logged Data	2.195	SD of logged Data	1.179

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.13	95% Adjusted-CLT UCL (Chen-1995)	24.46
		95% Modified-t UCL (Johnson-1978)	24.34

Nonparametric Distribution Free UCLs

95% CLT UCL	23.1	95% Jackknife UCL	24.13
95% Standard Bootstrap UCL	22.72	95% Bootstrap-t UCL	26.94
95% Hall's Bootstrap UCL	22.26	95% Percentile Bootstrap UCL	23
95% BCA Bootstrap UCL	24.12		
90% Chebyshev(Mean, Sd) UCL	29.59	95% Chebyshev(Mean, Sd) UCL	36.11
97.5% Chebyshev(Mean, Sd) UCL	45.15	99% Chebyshev(Mean, Sd) UCL	62.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.37	Mean	18.46
Maximum	46.8	Median	10.4
SD	17.94	Std. Error of Mean	5.979
Coefficient of Variation	0.972	Skewness	0.656
Mean of logged Data	2.255	SD of logged Data	1.39

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.58	95% Adjusted-CLT UCL (Chen-1995)	29.69
		95% Modified-t UCL (Johnson-1978)	29.8

Nonparametric Distribution Free UCLs

95% CLT UCL	28.3	95% Jackknife UCL	29.58
95% Standard Bootstrap UCL	27.84	95% Bootstrap-t UCL	31.42
95% Hall's Bootstrap UCL	26.55	95% Percentile Bootstrap UCL	27.98
95% BCA Bootstrap UCL	28.42		
90% Chebyshev(Mean, Sd) UCL	36.4	95% Chebyshev(Mean, Sd) UCL	44.52
97.5% Chebyshev(Mean, Sd) UCL	55.8	99% Chebyshev(Mean, Sd) UCL	77.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.64	Mean	26.77
Maximum	71.6	Median	14.8
SD	25.61	Std. Error of Mean	8.535
Coefficient of Variation	0.957	Skewness	0.798
Mean of logged Data	2.721	SD of logged Data	1.247

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.64	95% Adjusted-CLT UCL (Chen-1995)	43.23
		95% Modified-t UCL (Johnson-1978)	43.02

Nonparametric Distribution Free UCLs

95% CLT UCL	40.81	95% Jackknife UCL	42.64
95% Standard Bootstrap UCL	39.82	95% Bootstrap-t UCL	47.64
95% Hall's Bootstrap UCL	38.99	95% Percentile Bootstrap UCL	41.06
95% BCA Bootstrap UCL	41.9		
90% Chebyshev(Mean, Sd) UCL	52.37	95% Chebyshev(Mean, Sd) UCL	63.97
97.5% Chebyshev(Mean, Sd) UCL	80.07	99% Chebyshev(Mean, Sd) UCL	111.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.075	Mean	13.25
Maximum	32.9	Median	6.93
SD	11.58	Std. Error of Mean	3.859
Coefficient of Variation	0.874	Skewness	0.769
Mean of logged Data	2.191	SD of logged Data	0.971

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.42	95% Adjusted-CLT UCL (Chen-1995)	20.65
		95% Modified-t UCL (Johnson-1978)	20.59

Nonparametric Distribution Free UCLs

95% CLT UCL	19.59	95% Jackknife UCL	20.42
95% Standard Bootstrap UCL	19.18	95% Bootstrap-t UCL	21.69
95% Hall's Bootstrap UCL	18.68	95% Percentile Bootstrap UCL	19.57
95% BCA Bootstrap UCL	19.98		
90% Chebyshev(Mean, Sd) UCL	24.82	95% Chebyshev(Mean, Sd) UCL	30.07
97.5% Chebyshev(Mean, Sd) UCL	37.34	99% Chebyshev(Mean, Sd) UCL	51.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.995	Mean	10.03
Maximum	23.5	Median	5.25
SD	8.669	Std. Error of Mean	2.89
Coefficient of Variation	0.865	Skewness	0.574
Mean of logged Data	1.878	SD of logged Data	1.039

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.4	95% Adjusted-CLT UCL (Chen-1995)	15.37
		95% Modified-t UCL (Johnson-1978)	15.49

Nonparametric Distribution Free UCLs

95% CLT UCL	14.78	95% Jackknife UCL	15.4
95% Standard Bootstrap UCL	14.52	95% Bootstrap-t UCL	16.57
95% Hall's Bootstrap UCL	13.88	95% Percentile Bootstrap UCL	14.64
95% BCA Bootstrap UCL	15.39		
90% Chebyshev(Mean, Sd) UCL	18.7	95% Chebyshev(Mean, Sd) UCL	22.62
97.5% Chebyshev(Mean, Sd) UCL	28.07	99% Chebyshev(Mean, Sd) UCL	38.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.9	Mean	19.18
Maximum	51.6	Median	10.1
SD	18.4	Std. Error of Mean	6.132
Coefficient of Variation	0.959	Skewness	0.795
Mean of logged Data	2.377	SD of logged Data	1.263

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.58	95% Adjusted-CLT UCL (Chen-1995)	31
		95% Modified-t UCL (Johnson-1978)	30.85

Nonparametric Distribution Free UCLs

95% CLT UCL	29.26	95% Jackknife UCL	30.58
95% Standard Bootstrap UCL	28.72	95% Bootstrap-t UCL	34.26
95% Hall's Bootstrap UCL	28.42	95% Percentile Bootstrap UCL	29.29
95% BCA Bootstrap UCL	30.89		
90% Chebyshev(Mean, Sd) UCL	37.57	95% Chebyshev(Mean, Sd) UCL	45.91
97.5% Chebyshev(Mean, Sd) UCL	57.47	99% Chebyshev(Mean, Sd) UCL	80.19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.54	Mean	4.712
Maximum	8.29	Median	3.315
SD	2.144	Std. Error of Mean	0.715
Coefficient of Variation	0.455	Skewness	0.658
Mean of logged Data	1.461	SD of logged Data	0.443

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.041	95% Adjusted-CLT UCL (Chen-1995)	6.055
		95% Modified-t UCL (Johnson-1978)	6.067

Nonparametric Distribution Free UCLs

95% CLT UCL	5.888	95% Jackknife UCL	6.041
95% Standard Bootstrap UCL	5.824	95% Bootstrap-t UCL	6.287
95% Hall's Bootstrap UCL	5.74	95% Percentile Bootstrap UCL	5.843
95% BCA Bootstrap UCL	5.962		
90% Chebyshev(Mean, Sd) UCL	6.856	95% Chebyshev(Mean, Sd) UCL	7.827
97.5% Chebyshev(Mean, Sd) UCL	9.175	99% Chebyshev(Mean, Sd) UCL	11.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	26.43
Maximum	72.3	Median	15.6
SD	26.2	Std. Error of Mean	8.732
Coefficient of Variation	0.991	Skewness	0.855
Mean of logged Data	2.666	SD of logged Data	1.303

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.67	95% Adjusted-CLT UCL (Chen-1995)	43.45
		95% Modified-t UCL (Johnson-1978)	43.08

Nonparametric Distribution Free UCLs

95% CLT UCL	40.79	95% Jackknife UCL	42.67
95% Standard Bootstrap UCL	40.05	95% Bootstrap-t UCL	47.46
95% Hall's Bootstrap UCL	38.29	95% Percentile Bootstrap UCL	40.05
95% BCA Bootstrap UCL	42.35		
90% Chebyshev(Mean, Sd) UCL	52.62	95% Chebyshev(Mean, Sd) UCL	64.49
97.5% Chebyshev(Mean, Sd) UCL	80.96	99% Chebyshev(Mean, Sd) UCL	113.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.18	Mean	1.254
Maximum	1.325	Median	1.25
SD	0.0486	Std. Error of Mean	0.0162
Coefficient of Variation	0.0388	Skewness	0.302
Mean of logged Data	0.226	SD of logged Data	0.0386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.285	95% Adjusted-CLT UCL (Chen-1995)	1.283
		95% Modified-t UCL (Johnson-1978)	1.285

Nonparametric Distribution Free UCLs

95% CLT UCL	1.281	95% Jackknife UCL	1.285
95% Standard Bootstrap UCL	1.28	95% Bootstrap-t UCL	1.289
95% Hall's Bootstrap UCL	1.295	95% Percentile Bootstrap UCL	1.28
95% BCA Bootstrap UCL	1.281		
90% Chebyshev(Mean, Sd) UCL	1.303	95% Chebyshev(Mean, Sd) UCL	1.325
97.5% Chebyshev(Mean, Sd) UCL	1.356	99% Chebyshev(Mean, Sd) UCL	1.416

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.79	Mean	15.53
Maximum	37.1	Median	8.73
SD	13.88	Std. Error of Mean	4.626
Coefficient of Variation	0.894	Skewness	0.688
Mean of logged Data	2.299	SD of logged Data	1.056

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.13	95% Adjusted-CLT UCL (Chen-1995)	24.27
		95% Modified-t UCL (Johnson-1978)	24.31

Nonparametric Distribution Free UCLs

95% CLT UCL	23.14	95% Jackknife UCL	24.13
95% Standard Bootstrap UCL	22.82	95% Bootstrap-t UCL	26.69
95% Hall's Bootstrap UCL	22.31	95% Percentile Bootstrap UCL	22.97
95% BCA Bootstrap UCL	23.88		
90% Chebyshev(Mean, Sd) UCL	29.41	95% Chebyshev(Mean, Sd) UCL	35.69
97.5% Chebyshev(Mean, Sd) UCL	44.42	99% Chebyshev(Mean, Sd) UCL	61.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.605	Mean	1.686
Maximum	4.71	Median	1.37
SD	1.255	Std. Error of Mean	0.418
Coefficient of Variation	0.745	Skewness	2.061
Mean of logged Data	0.336	SD of logged Data	0.613

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.464	95% Adjusted-CLT UCL (Chen-1995)	2.681
		95% Modified-t UCL (Johnson-1978)	2.511

Nonparametric Distribution Free UCLs

95% CLT UCL	2.374	95% Jackknife UCL	2.464
95% Standard Bootstrap UCL	2.337	95% Bootstrap-t UCL	3.351
95% Hall's Bootstrap UCL	5.101	95% Percentile Bootstrap UCL	2.384
95% BCA Bootstrap UCL	2.694		
90% Chebyshev(Mean, Sd) UCL	2.941	95% Chebyshev(Mean, Sd) UCL	3.509
97.5% Chebyshev(Mean, Sd) UCL	4.298	99% Chebyshev(Mean, Sd) UCL	5.849

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.85	Mean	10.86
Maximum	30.7	Median	6.62
SD	9.871	Std. Error of Mean	3.29
Coefficient of Variation	0.909	Skewness	1.204
Mean of logged Data	2.023	SD of logged Data	0.899

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.98	95% Adjusted-CLT UCL (Chen-1995)	17.69
		95% Modified-t UCL (Johnson-1978)	17.2

Nonparametric Distribution Free UCLs

95% CLT UCL	16.27	95% Jackknife UCL	16.98
95% Standard Bootstrap UCL	15.99	95% Bootstrap-t UCL	19.97
95% Hall's Bootstrap UCL	15.86	95% Percentile Bootstrap UCL	16.43
95% BCA Bootstrap UCL	17.2		
90% Chebyshev(Mean, Sd) UCL	20.73	95% Chebyshev(Mean, Sd) UCL	25.2
97.5% Chebyshev(Mean, Sd) UCL	31.41	99% Chebyshev(Mean, Sd) UCL	43.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.11	Mean	25.13
Maximum	69.4	Median	14.3
SD	25.33	Std. Error of Mean	8.442
Coefficient of Variation	1.008	Skewness	0.838
Mean of logged Data	2.569	SD of logged Data	1.36

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.83	95% Adjusted-CLT UCL (Chen-1995)	41.54
		95% Modified-t UCL (Johnson-1978)	41.22

Nonparametric Distribution Free UCLs

95% CLT UCL	39.02	95% Jackknife UCL	40.83
95% Standard Bootstrap UCL	38.25	95% Bootstrap-t UCL	45.42
95% Hall's Bootstrap UCL	36.5	95% Percentile Bootstrap UCL	38.4
95% BCA Bootstrap UCL	40.32		
90% Chebyshev(Mean, Sd) UCL	50.46	95% Chebyshev(Mean, Sd) UCL	61.93
97.5% Chebyshev(Mean, Sd) UCL	77.85	99% Chebyshev(Mean, Sd) UCL	109.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:40:32 AM
From File	21078C_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	15.3	Mean	17.36
Maximum	21.2	Median	17
SD	1.851	Std. Error of Mean	0.617
Coefficient of Variation	0.107	Skewness	1.054
Mean of logged Data	2.849	SD of logged Data	0.103

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.5	95% Adjusted-CLT UCL (Chen-1995)	18.6
		95% Modified-t UCL (Johnson-1978)	18.54

Nonparametric Distribution Free UCLs

95% CLT UCL	18.37	95% Jackknife UCL	18.5
95% Standard Bootstrap UCL	18.28	95% Bootstrap-t UCL	18.82
95% Hall's Bootstrap UCL	19.21	95% Percentile Bootstrap UCL	18.39
95% BCA Bootstrap UCL	18.54		
90% Chebyshev(Mean, Sd) UCL	19.21	95% Chebyshev(Mean, Sd) UCL	20.05
97.5% Chebyshev(Mean, Sd) UCL	21.21	99% Chebyshev(Mean, Sd) UCL	23.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.1	Mean	35.38
Maximum	109	Median	25.2
SD	31.64	Std. Error of Mean	10.55
Coefficient of Variation	0.894	Skewness	1.964
Mean of logged Data	3.302	SD of logged Data	0.721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.99	95% Adjusted-CLT UCL (Chen-1995)	60.1
		95% Modified-t UCL (Johnson-1978)	56.14

Nonparametric Distribution Free UCLs

95% CLT UCL	52.72	95% Jackknife UCL	54.99
95% Standard Bootstrap UCL	51.48	95% Bootstrap-t UCL	103.2
95% Hall's Bootstrap UCL	158.1	95% Percentile Bootstrap UCL	53.92
95% BCA Bootstrap UCL	59.32		
90% Chebyshev(Mean, Sd) UCL	67.01	95% Chebyshev(Mean, Sd) UCL	81.34
97.5% Chebyshev(Mean, Sd) UCL	101.2	99% Chebyshev(Mean, Sd) UCL	140.3

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	52.8	Mean	58.06
Maximum	63.3	Median	58.5
SD	4.259	Std. Error of Mean	1.42
Coefficient of Variation	0.0734	Skewness	-0.0836
Mean of logged Data	4.059	SD of logged Data	0.0737

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	60.7	95% Adjusted-CLT UCL (Chen-1995)	60.35
		95% Modified-t UCL (Johnson-1978)	60.69

Nonparametric Distribution Free UCLs

95% CLT UCL	60.39	95% Jackknife UCL	60.7
95% Standard Bootstrap UCL	60.24	95% Bootstrap-t UCL	60.74
95% Hall's Bootstrap UCL	59.91	95% Percentile Bootstrap UCL	60.26
95% BCA Bootstrap UCL	60.28		
90% Chebyshev(Mean, Sd) UCL	62.31	95% Chebyshev(Mean, Sd) UCL	64.24
97.5% Chebyshev(Mean, Sd) UCL	66.92	99% Chebyshev(Mean, Sd) UCL	72.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.683	Mean	1.535
Maximum	5.19	Median	0.99
SD	1.395	Std. Error of Mean	0.465
Coefficient of Variation	0.909	Skewness	2.805
Mean of logged Data	0.224	SD of logged Data	0.586

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.4	95% Adjusted-CLT UCL (Chen-1995)	2.764
		95% Modified-t UCL (Johnson-1978)	2.472

Nonparametric Distribution Free UCLs

95% CLT UCL	2.3	95% Jackknife UCL	2.4
95% Standard Bootstrap UCL	2.257	95% Bootstrap-t UCL	4.957
95% Hall's Bootstrap UCL	5.366	95% Percentile Bootstrap UCL	2.428
95% BCA Bootstrap UCL	2.886		
90% Chebyshev(Mean, Sd) UCL	2.93	95% Chebyshev(Mean, Sd) UCL	3.562
97.5% Chebyshev(Mean, Sd) UCL	4.439	99% Chebyshev(Mean, Sd) UCL	6.161

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.562

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.322	Mean	0.588
Maximum	0.785	Median	0.544
SD	0.164	Std. Error of Mean	0.0546
Coefficient of Variation	0.278	Skewness	-0.351
Mean of logged Data	-0.57	SD of logged Data	0.306

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.69	95% Adjusted-CLT UCL (Chen-1995)	0.671
		95% Modified-t UCL (Johnson-1978)	0.689

Nonparametric Distribution Free UCLs

95% CLT UCL	0.678	95% Jackknife UCL	0.69
95% Standard Bootstrap UCL	0.671	95% Bootstrap-t UCL	0.678
95% Hall's Bootstrap UCL	0.667	95% Percentile Bootstrap UCL	0.667
95% BCA Bootstrap UCL	0.669		
90% Chebyshev(Mean, Sd) UCL	0.752	95% Chebyshev(Mean, Sd) UCL	0.826
97.5% Chebyshev(Mean, Sd) UCL	0.929	99% Chebyshev(Mean, Sd) UCL	1.131

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.76	Mean	2.356
Maximum	3.185	Median	2.125
SD	0.567	Std. Error of Mean	0.189
Coefficient of Variation	0.241	Skewness	0.687
Mean of logged Data	0.832	SD of logged Data	0.231

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.707	95% Adjusted-CLT UCL (Chen-1995)	2.712
		95% Modified-t UCL (Johnson-1978)	2.714

Nonparametric Distribution Free UCLs

95% CLT UCL	2.666	95% Jackknife UCL	2.707
95% Standard Bootstrap UCL	2.655	95% Bootstrap-t UCL	2.751
95% Hall's Bootstrap UCL	2.593	95% Percentile Bootstrap UCL	2.656
95% BCA Bootstrap UCL	2.689		
90% Chebyshev(Mean, Sd) UCL	2.922	95% Chebyshev(Mean, Sd) UCL	3.179
97.5% Chebyshev(Mean, Sd) UCL	3.535	99% Chebyshev(Mean, Sd) UCL	4.235

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	10.23
Maximum	23.4	Median	6.98
SD	7.747	Std. Error of Mean	2.582
Coefficient of Variation	0.757	Skewness	0.61
Mean of logged Data	2.035	SD of logged Data	0.83

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.04	95% Adjusted-CLT UCL (Chen-1995)	15.04
		95% Modified-t UCL (Johnson-1978)	15.12

Nonparametric Distribution Free UCLs

95% CLT UCL	14.48	95% Jackknife UCL	15.04
95% Standard Bootstrap UCL	14.34	95% Bootstrap-t UCL	15.88
95% Hall's Bootstrap UCL	14	95% Percentile Bootstrap UCL	14.49
95% BCA Bootstrap UCL	14.76		
90% Chebyshev(Mean, Sd) UCL	17.98	95% Chebyshev(Mean, Sd) UCL	21.49
97.5% Chebyshev(Mean, Sd) UCL	26.36	99% Chebyshev(Mean, Sd) UCL	35.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.98	Mean	13.77
Maximum	32.2	Median	9.94
SD	11.11	Std. Error of Mean	3.705
Coefficient of Variation	0.807	Skewness	0.635
Mean of logged Data	2.274	SD of logged Data	0.926

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.65	95% Adjusted-CLT UCL (Chen-1995)	20.7
		95% Modified-t UCL (Johnson-1978)	20.79

Nonparametric Distribution Free UCLs

95% CLT UCL	19.86	95% Jackknife UCL	20.65
95% Standard Bootstrap UCL	19.59	95% Bootstrap-t UCL	21.74
95% Hall's Bootstrap UCL	18.99	95% Percentile Bootstrap UCL	19.78
95% BCA Bootstrap UCL	20.09		
90% Chebyshev(Mean, Sd) UCL	24.88	95% Chebyshev(Mean, Sd) UCL	29.91
97.5% Chebyshev(Mean, Sd) UCL	36.9	99% Chebyshev(Mean, Sd) UCL	50.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.585	Mean	19.24
Maximum	42.8	Median	13.6
SD	15.02	Std. Error of Mean	5.005
Coefficient of Variation	0.78	Skewness	0.564
Mean of logged Data	2.635	SD of logged Data	0.886

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.55	95% Adjusted-CLT UCL (Chen-1995)	28.48
		95% Modified-t UCL (Johnson-1978)	28.7

Nonparametric Distribution Free UCLs

95% CLT UCL	27.47	95% Jackknife UCL	28.55
95% Standard Bootstrap UCL	27.18	95% Bootstrap-t UCL	30.48
95% Hall's Bootstrap UCL	26.22	95% Percentile Bootstrap UCL	26.94
95% BCA Bootstrap UCL	27.29		
90% Chebyshev(Mean, Sd) UCL	34.25	95% Chebyshev(Mean, Sd) UCL	41.06
97.5% Chebyshev(Mean, Sd) UCL	50.5	99% Chebyshev(Mean, Sd) UCL	69.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.93	Mean	11
Maximum	25.5	Median	7.19
SD	8.091	Std. Error of Mean	2.697
Coefficient of Variation	0.736	Skewness	0.835
Mean of logged Data	2.151	SD of logged Data	0.745

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.01	95% Adjusted-CLT UCL (Chen-1995)	16.23
		95% Modified-t UCL (Johnson-1978)	16.14

Nonparametric Distribution Free UCLs

95% CLT UCL	15.43	95% Jackknife UCL	16.01
95% Standard Bootstrap UCL	15.19	95% Bootstrap-t UCL	17.59
95% Hall's Bootstrap UCL	15.02	95% Percentile Bootstrap UCL	15.33
95% BCA Bootstrap UCL	15.82		
90% Chebyshev(Mean, Sd) UCL	19.09	95% Chebyshev(Mean, Sd) UCL	22.75
97.5% Chebyshev(Mean, Sd) UCL	27.84	99% Chebyshev(Mean, Sd) UCL	37.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.98	Mean	8.263
Maximum	20.4	Median	5.46
SD	6.359	Std. Error of Mean	2.12
Coefficient of Variation	0.77	Skewness	0.971
Mean of logged Data	1.847	SD of logged Data	0.77

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.2	95% Adjusted-CLT UCL (Chen-1995)	12.48
		95% Modified-t UCL (Johnson-1978)	12.32

Nonparametric Distribution Free UCLs

95% CLT UCL	11.75	95% Jackknife UCL	12.2
95% Standard Bootstrap UCL	11.46	95% Bootstrap-t UCL	13.92
95% Hall's Bootstrap UCL	11.76	95% Percentile Bootstrap UCL	11.65
95% BCA Bootstrap UCL	11.96		
90% Chebyshev(Mean, Sd) UCL	14.62	95% Chebyshev(Mean, Sd) UCL	17.5
97.5% Chebyshev(Mean, Sd) UCL	21.5	99% Chebyshev(Mean, Sd) UCL	29.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	13.77
Maximum	31.9	Median	10.1
SD	11.18	Std. Error of Mean	3.728
Coefficient of Variation	0.812	Skewness	0.576
Mean of logged Data	2.26	SD of logged Data	0.949

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.7	95% Adjusted-CLT UCL (Chen-1995)	20.67
		95% Modified-t UCL (Johnson-1978)	20.82

Nonparametric Distribution Free UCLs

95% CLT UCL	19.9	95% Jackknife UCL	20.7
95% Standard Bootstrap UCL	19.38	95% Bootstrap-t UCL	22.37
95% Hall's Bootstrap UCL	19.04	95% Percentile Bootstrap UCL	20.03
95% BCA Bootstrap UCL	19.53		
90% Chebyshev(Mean, Sd) UCL	24.96	95% Chebyshev(Mean, Sd) UCL	30.02
97.5% Chebyshev(Mean, Sd) UCL	37.05	99% Chebyshev(Mean, Sd) UCL	50.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.88	Mean	5.042
Maximum	12.4	Median	4.585
SD	2.87	Std. Error of Mean	0.957
Coefficient of Variation	0.569	Skewness	2.562
Mean of logged Data	1.521	SD of logged Data	0.425

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.821	95% Adjusted-CLT UCL (Chen-1995)	7.488
		95% Modified-t UCL (Johnson-1978)	6.957

Nonparametric Distribution Free UCLs

95% CLT UCL	6.615	95% Jackknife UCL	6.821
95% Standard Bootstrap UCL	6.522	95% Bootstrap-t UCL	9.267
95% Hall's Bootstrap UCL	13.31	95% Percentile Bootstrap UCL	6.762
95% BCA Bootstrap UCL	7.292		
90% Chebyshev(Mean, Sd) UCL	7.912	95% Chebyshev(Mean, Sd) UCL	9.212
97.5% Chebyshev(Mean, Sd) UCL	11.02	99% Chebyshev(Mean, Sd) UCL	14.56

Suggested UCL to Use

95% Student's-t UCL	6.821	or 95% Modified-t UCL	6.957

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	16.61
Maximum	32.2	Median	11.8
SD	13.04	Std. Error of Mean	4.347
Coefficient of Variation	0.785	Skewness	0.223
Mean of logged Data	2.423	SD of logged Data	1.009

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.69	95% Adjusted-CLT UCL (Chen-1995)	24.1
		95% Modified-t UCL (Johnson-1978)	24.74

Nonparametric Distribution Free UCLs

95% CLT UCL	23.76	95% Jackknife UCL	24.69
95% Standard Bootstrap UCL	23.45	95% Bootstrap-t UCL	25.6
95% Hall's Bootstrap UCL	22	95% Percentile Bootstrap UCL	23.47
95% BCA Bootstrap UCL	23.59		
90% Chebyshev(Mean, Sd) UCL	29.65	95% Chebyshev(Mean, Sd) UCL	35.56
97.5% Chebyshev(Mean, Sd) UCL	43.75	99% Chebyshev(Mean, Sd) UCL	59.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.285	Mean	1.509
Maximum	1.96	Median	1.325
SD	0.295	Std. Error of Mean	0.0983
Coefficient of Variation	0.195	Skewness	0.892
Mean of logged Data	0.396	SD of logged Data	0.185

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.692	95% Adjusted-CLT UCL (Chen-1995)	1.702
		95% Modified-t UCL (Johnson-1978)	1.697

Nonparametric Distribution Free UCLs

95% CLT UCL	1.671	95% Jackknife UCL	1.692
95% Standard Bootstrap UCL	1.665	95% Bootstrap-t UCL	1.741
95% Hall's Bootstrap UCL	1.606	95% Percentile Bootstrap UCL	1.661
95% BCA Bootstrap UCL	1.686		
90% Chebyshev(Mean, Sd) UCL	1.804	95% Chebyshev(Mean, Sd) UCL	1.938
97.5% Chebyshev(Mean, Sd) UCL	2.123	99% Chebyshev(Mean, Sd) UCL	2.487

Suggested UCL to Use

95% Student's-t UCL	1.692	or 95% Modified-t UCL	1.697

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	4.36	Mean	11.69
Maximum	26.6	Median	7.7
SD	8.544	Std. Error of Mean	2.848
Coefficient of Variation	0.731	Skewness	0.793
Mean of logged Data	2.214	SD of logged Data	0.742

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.98	95% Adjusted-CLT UCL (Chen-1995)	17.17
		95% Modified-t UCL (Johnson-1978)	17.11

Nonparametric Distribution Free UCLs

95% CLT UCL	16.37	95% Jackknife UCL	16.98
95% Standard Bootstrap UCL	16.12	95% Bootstrap-t UCL	18.32
95% Hall's Bootstrap UCL	15.96	95% Percentile Bootstrap UCL	16.21
95% BCA Bootstrap UCL	16.87		
90% Chebyshev(Mean, Sd) UCL	20.23	95% Chebyshev(Mean, Sd) UCL	24.1
97.5% Chebyshev(Mean, Sd) UCL	29.47	99% Chebyshev(Mean, Sd) UCL	40.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.11	Mean	1.743
Maximum	3.27	Median	1.54
SD	0.725	Std. Error of Mean	0.242
Coefficient of Variation	0.416	Skewness	1.343
Mean of logged Data	0.489	SD of logged Data	0.375

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.193	95% Adjusted-CLT UCL (Chen-1995)	2.256
		95% Modified-t UCL (Johnson-1978)	2.211

Nonparametric Distribution Free UCLs

95% CLT UCL	2.141	95% Jackknife UCL	2.193
95% Standard Bootstrap UCL	2.127	95% Bootstrap-t UCL	2.557

95% Hall's Bootstrap UCL	3.887	95% Percentile Bootstrap UCL	2.129
95% BCA Bootstrap UCL	2.231		
90% Chebyshev(Mean, Sd) UCL	2.468	95% Chebyshev(Mean, Sd) UCL	2.796
97.5% Chebyshev(Mean, Sd) UCL	3.252	99% Chebyshev(Mean, Sd) UCL	4.147

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.61	Mean	7.506
Maximum	12	Median	4.9
SD	3.901	Std. Error of Mean	1.3
Coefficient of Variation	0.52	Skewness	0.167
Mean of logged Data	1.88	SD of logged Data	0.569

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.923	95% Adjusted-CLT UCL (Chen-1995)	9.722
		95% Modified-t UCL (Johnson-1978)	9.936

Nonparametric Distribution Free UCLs

95% CLT UCL	9.644	95% Jackknife UCL	9.923
95% Standard Bootstrap UCL	9.56	95% Bootstrap-t UCL	9.648
95% Hall's Bootstrap UCL	9.039	95% Percentile Bootstrap UCL	9.339
95% BCA Bootstrap UCL	9.349		
90% Chebyshev(Mean, Sd) UCL	11.41	95% Chebyshev(Mean, Sd) UCL	13.17
97.5% Chebyshev(Mean, Sd) UCL	15.63	99% Chebyshev(Mean, Sd) UCL	20.44

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.585	Mean	17.44
Maximum	34	Median	12.6
SD	13.14	Std. Error of Mean	4.379

Coefficient of Variation	0.753	Skewness	0.318
Mean of logged Data	2.54	SD of logged Data	0.888

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.58	95% Adjusted-CLT UCL (Chen-1995)	25.14
		95% Modified-t UCL (Johnson-1978)	25.66

Nonparametric Distribution Free UCLs

95% CLT UCL	24.64	95% Jackknife UCL	25.58
95% Standard Bootstrap UCL	24.4	95% Bootstrap-t UCL	26.43
95% Hall's Bootstrap UCL	22.93	95% Percentile Bootstrap UCL	24.14
95% BCA Bootstrap UCL	24.04		
90% Chebyshev(Mean, Sd) UCL	30.58	95% Chebyshev(Mean, Sd) UCL	36.53
97.5% Chebyshev(Mean, Sd) UCL	44.79	99% Chebyshev(Mean, Sd) UCL	61.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:41:46 AM
From File	21078D_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.8	Mean	12.43
Maximum	13.5	Median	12.9
SD	0.967	Std. Error of Mean	0.322
Coefficient of Variation	0.0778	Skewness	-0.493
Mean of logged Data	2.518	SD of logged Data	0.0792

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.03	95% Adjusted-CLT UCL (Chen-1995)	12.91
		95% Modified-t UCL (Johnson-1978)	13.02

Nonparametric Distribution Free UCLs

95% CLT UCL	12.96	95% Jackknife UCL	13.03
95% Standard Bootstrap UCL	12.93	95% Bootstrap-t UCL	12.98
95% Hall's Bootstrap UCL	12.86	95% Percentile Bootstrap UCL	12.93
95% BCA Bootstrap UCL	12.88		
90% Chebyshev(Mean, Sd) UCL	13.4	95% Chebyshev(Mean, Sd) UCL	13.84
97.5% Chebyshev(Mean, Sd) UCL	14.45	99% Chebyshev(Mean, Sd) UCL	15.64

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.91	Mean	51.8
Maximum	191	Median	31.8
SD	59.14	Std. Error of Mean	19.71
Coefficient of Variation	1.142	Skewness	1.922

Mean of logged Data	3.422	SD of logged Data	1.084

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	88.46	95% Adjusted-CLT UCL (Chen-1995)	97.72
		95% Modified-t UCL (Johnson-1978)	90.56

Nonparametric Distribution Free UCLs

95% CLT UCL	84.22	95% Jackknife UCL	88.46
95% Standard Bootstrap UCL	82.89	95% Bootstrap-t UCL	129
95% Hall's Bootstrap UCL	214.5	95% Percentile Bootstrap UCL	86.34
95% BCA Bootstrap UCL	94.74		
90% Chebyshev(Mean, Sd) UCL	110.9	95% Chebyshev(Mean, Sd) UCL	137.7
97.5% Chebyshev(Mean, Sd) UCL	174.9	99% Chebyshev(Mean, Sd) UCL	248

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.5	Mean	47.17
Maximum	50.5	Median	47.2
SD	2.965	Std. Error of Mean	0.988
Coefficient of Variation	0.0629	Skewness	-1.439
Mean of logged Data	3.852	SD of logged Data	0.0654

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49	95% Adjusted-CLT UCL (Chen-1995)	48.29
		95% Modified-t UCL (Johnson-1978)	48.93

Nonparametric Distribution Free UCLs

95% CLT UCL	48.79	95% Jackknife UCL	49
95% Standard Bootstrap UCL	48.71	95% Bootstrap-t UCL	48.66
95% Hall's Bootstrap UCL	48.47	95% Percentile Bootstrap UCL	48.58
95% BCA Bootstrap UCL	48.38		
90% Chebyshev(Mean, Sd) UCL	50.13	95% Chebyshev(Mean, Sd) UCL	51.47
97.5% Chebyshev(Mean, Sd) UCL	53.34	99% Chebyshev(Mean, Sd) UCL	57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.71	Mean	0.915
Maximum	1.81	Median	0.8
SD	0.342	Std. Error of Mean	0.114
Coefficient of Variation	0.374	Skewness	2.773
Mean of logged Data	-0.132	SD of logged Data	0.285

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.128	95% Adjusted-CLT UCL (Chen-1995)	1.216
		95% Modified-t UCL (Johnson-1978)	1.145

Nonparametric Distribution Free UCLs

95% CLT UCL	1.103	95% Jackknife UCL	1.128
95% Standard Bootstrap UCL	1.095	95% Bootstrap-t UCL	1.684
95% Hall's Bootstrap UCL	1.903	95% Percentile Bootstrap UCL	1.132
95% BCA Bootstrap UCL	1.244		
90% Chebyshev(Mean, Sd) UCL	1.258	95% Chebyshev(Mean, Sd) UCL	1.413
97.5% Chebyshev(Mean, Sd) UCL	1.628	99% Chebyshev(Mean, Sd) UCL	2.051

Suggested UCL to Use

95% Student's-t UCL	1.128	or 95% Modified-t UCL	1.145

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.496	Mean	0.684
Maximum	1.16	Median	0.525
SD	0.265	Std. Error of Mean	0.0884
Coefficient of Variation	0.388	Skewness	1.044
Mean of logged Data	-0.439	SD of logged Data	0.352

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.848	95% Adjusted-CLT UCL (Chen-1995)	0.862
		95% Modified-t UCL (Johnson-1978)	0.854

Nonparametric Distribution Free UCLs

95% CLT UCL	0.829	95% Jackknife UCL	0.848
95% Standard Bootstrap UCL	0.822	95% Bootstrap-t UCL	0.915
95% Hall's Bootstrap UCL	0.775	95% Percentile Bootstrap UCL	0.832
95% BCA Bootstrap UCL	0.85		
90% Chebyshev(Mean, Sd) UCL	0.949	95% Chebyshev(Mean, Sd) UCL	1.069
97.5% Chebyshev(Mean, Sd) UCL	1.236	99% Chebyshev(Mean, Sd) UCL	1.563

Suggested UCL to Use

95% Student's-t UCL	0.848	or 95% Modified-t UCL	0.854

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	2.318
Maximum	3.09	Median	2.125
SD	0.388	Std. Error of Mean	0.129
Coefficient of Variation	0.167	Skewness	1.265
Mean of logged Data	0.829	SD of logged Data	0.157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.559	95% Adjusted-CLT UCL (Chen-1995)	2.589
		95% Modified-t UCL (Johnson-1978)	2.568

Nonparametric Distribution Free UCLs

95% CLT UCL	2.531	95% Jackknife UCL	2.559
95% Standard Bootstrap UCL	2.518	95% Bootstrap-t UCL	2.742
95% Hall's Bootstrap UCL	2.509	95% Percentile Bootstrap UCL	2.531
95% BCA Bootstrap UCL	2.569		
90% Chebyshev(Mean, Sd) UCL	2.706	95% Chebyshev(Mean, Sd) UCL	2.882
97.5% Chebyshev(Mean, Sd) UCL	3.126	99% Chebyshev(Mean, Sd) UCL	3.605

Suggested UCL to Use

95% Student's-t UCL	2.559	or 95% Modified-t UCL	2.568

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	12.86
Maximum	32.1	Median	5.61
SD	13.03	Std. Error of Mean	4.342
Coefficient of Variation	1.013	Skewness	0.809
Mean of logged Data	2.021	SD of logged Data	1.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.94	95% Adjusted-CLT UCL (Chen-1995)	21.26
		95% Modified-t UCL (Johnson-1978)	21.13

Nonparametric Distribution Free UCLs

95% CLT UCL	20.01	95% Jackknife UCL	20.94
95% Standard Bootstrap UCL	19.59	95% Bootstrap-t UCL	22.18
95% Hall's Bootstrap UCL	17.46	95% Percentile Bootstrap UCL	19.46
95% BCA Bootstrap UCL	20.69		
90% Chebyshev(Mean, Sd) UCL	25.89	95% Chebyshev(Mean, Sd) UCL	31.79
97.5% Chebyshev(Mean, Sd) UCL	39.98	99% Chebyshev(Mean, Sd) UCL	56.07

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.55	Mean	16.6
Maximum	41.7	Median	7.57
SD	17.81	Std. Error of Mean	5.936
Coefficient of Variation	1.073	Skewness	0.788
Mean of logged Data	2.126	SD of logged Data	1.329

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.64	95% Adjusted-CLT UCL (Chen-1995)	28.03
		95% Modified-t UCL (Johnson-1978)	27.9

Nonparametric Distribution Free UCLs

95% CLT UCL	26.37	95% Jackknife UCL	27.64
95% Standard Bootstrap UCL	25.64	95% Bootstrap-t UCL	29.2
95% Hall's Bootstrap UCL	22.91	95% Percentile Bootstrap UCL	27.56
95% BCA Bootstrap UCL	27.94		
90% Chebyshev(Mean, Sd) UCL	34.41	95% Chebyshev(Mean, Sd) UCL	42.48
97.5% Chebyshev(Mean, Sd) UCL	53.67	99% Chebyshev(Mean, Sd) UCL	75.66

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.14	Mean	24.03
Maximum	58.3	Median	11.3
SD	24.89	Std. Error of Mean	8.295
Coefficient of Variation	1.035	Skewness	0.774
Mean of logged Data	2.573	SD of logged Data	1.231

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.46	95% Adjusted-CLT UCL (Chen-1995)	39.96
		95% Modified-t UCL (Johnson-1978)	39.82

Nonparametric Distribution Free UCLs

95% CLT UCL	37.68	95% Jackknife UCL	39.46
95% Standard Bootstrap UCL	37.11	95% Bootstrap-t UCL	41.58
95% Hall's Bootstrap UCL	32.96	95% Percentile Bootstrap UCL	36.48
95% BCA Bootstrap UCL	40.22		
90% Chebyshev(Mean, Sd) UCL	48.92	95% Chebyshev(Mean, Sd) UCL	60.19
97.5% Chebyshev(Mean, Sd) UCL	75.84	99% Chebyshev(Mean, Sd) UCL	106.6

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.095	Mean	13.18
Maximum	30.5	Median	5.96
SD	12.52	Std. Error of Mean	4.174
Coefficient of Variation	0.95	Skewness	0.791
Mean of logged Data	2.14	SD of logged Data	0.997

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.94	95% Adjusted-CLT UCL (Chen-1995)	21.22
		95% Modified-t UCL (Johnson-1978)	21.13

Nonparametric Distribution Free UCLs

95% CLT UCL	20.05	95% Jackknife UCL	20.94
95% Standard Bootstrap UCL	19.77	95% Bootstrap-t UCL	21.98
95% Hall's Bootstrap UCL	17.54	95% Percentile Bootstrap UCL	19.54
95% BCA Bootstrap UCL	21.32		
90% Chebyshev(Mean, Sd) UCL	25.7	95% Chebyshev(Mean, Sd) UCL	31.38
97.5% Chebyshev(Mean, Sd) UCL	39.25	99% Chebyshev(Mean, Sd) UCL	54.71

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	9.219
Maximum	21.9	Median	4.02
SD	8.488	Std. Error of Mean	2.829
Coefficient of Variation	0.921	Skewness	0.782
Mean of logged Data	1.808	SD of logged Data	0.972

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.48	95% Adjusted-CLT UCL (Chen-1995)	14.66
		95% Modified-t UCL (Johnson-1978)	14.6

Nonparametric Distribution Free UCLs

95% CLT UCL	13.87	95% Jackknife UCL	14.48
95% Standard Bootstrap UCL	13.61	95% Bootstrap-t UCL	15.38
95% Hall's Bootstrap UCL	12.33	95% Percentile Bootstrap UCL	13.51
95% BCA Bootstrap UCL	14.55		
90% Chebyshev(Mean, Sd) UCL	17.71	95% Chebyshev(Mean, Sd) UCL	21.55
97.5% Chebyshev(Mean, Sd) UCL	26.89	99% Chebyshev(Mean, Sd) UCL	37.37

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	17.14
Maximum	42	Median	8.13
SD	17.74	Std. Error of Mean	5.913
Coefficient of Variation	1.035	Skewness	0.777
Mean of logged Data	2.24	SD of logged Data	1.227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.14	95% Adjusted-CLT UCL (Chen-1995)	28.51
		95% Modified-t UCL (Johnson-1978)	28.4

Nonparametric Distribution Free UCLs

95% CLT UCL	26.87	95% Jackknife UCL	28.14
95% Standard Bootstrap UCL	26.47	95% Bootstrap-t UCL	30
95% Hall's Bootstrap UCL	23.48	95% Percentile Bootstrap UCL	25.68
95% BCA Bootstrap UCL	28.52		
90% Chebyshev(Mean, Sd) UCL	34.88	95% Chebyshev(Mean, Sd) UCL	42.92
97.5% Chebyshev(Mean, Sd) UCL	54.07	99% Chebyshev(Mean, Sd) UCL	75.98

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.095	Mean	4.979
Maximum	8.15	Median	3.27
SD	2.323	Std. Error of Mean	0.774
Coefficient of Variation	0.467	Skewness	0.651
Mean of logged Data	1.513	SD of logged Data	0.448

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.419	95% Adjusted-CLT UCL (Chen-1995)	6.433
		95% Modified-t UCL (Johnson-1978)	6.447

Nonparametric Distribution Free UCLs

95% CLT UCL	6.253	95% Jackknife UCL	6.419
95% Standard Bootstrap UCL	6.201	95% Bootstrap-t UCL	6.746
95% Hall's Bootstrap UCL	5.879	95% Percentile Bootstrap UCL	6.266
95% BCA Bootstrap UCL	6.37		
90% Chebyshev(Mean, Sd) UCL	7.302	95% Chebyshev(Mean, Sd) UCL	8.355
97.5% Chebyshev(Mean, Sd) UCL	9.815	99% Chebyshev(Mean, Sd) UCL	12.68

Suggested UCL to Use

95% Student's-t UCL	6.419	or 95% Modified-t UCL	6.447

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	21.12
Maximum	52.9	Median	10.2
SD	22.88	Std. Error of Mean	7.626
Coefficient of Variation	1.083	Skewness	0.782
Mean of logged Data	2.338	SD of logged Data	1.365

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.3	95% Adjusted-CLT UCL (Chen-1995)	35.79
		95% Modified-t UCL (Johnson-1978)	35.63

Nonparametric Distribution Free UCLs

95% CLT UCL	33.66	95% Jackknife UCL	35.3
95% Standard Bootstrap UCL	32.92	95% Bootstrap-t UCL	37.85
95% Hall's Bootstrap UCL	29.05	95% Percentile Bootstrap UCL	32.75
95% BCA Bootstrap UCL	35.93		
90% Chebyshev(Mean, Sd) UCL	44	95% Chebyshev(Mean, Sd) UCL	54.36
97.5% Chebyshev(Mean, Sd) UCL	68.74	99% Chebyshev(Mean, Sd) UCL	97

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.24	Mean	1.282
Maximum	1.33	Median	1.275
SD	0.0331	Std. Error of Mean	0.011
Coefficient of Variation	0.0258	Skewness	0.565
Mean of logged Data	0.248	SD of logged Data	0.0257

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.303	95% Adjusted-CLT UCL (Chen-1995)	1.303
		95% Modified-t UCL (Johnson-1978)	1.303

Nonparametric Distribution Free UCLs

95% CLT UCL	1.3	95% Jackknife UCL	1.303
95% Standard Bootstrap UCL	1.3	95% Bootstrap-t UCL	1.306
95% Hall's Bootstrap UCL	1.303	95% Percentile Bootstrap UCL	1.299
95% BCA Bootstrap UCL	1.301		
90% Chebyshev(Mean, Sd) UCL	1.315	95% Chebyshev(Mean, Sd) UCL	1.33
97.5% Chebyshev(Mean, Sd) UCL	1.351	99% Chebyshev(Mean, Sd) UCL	1.392

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	2.27	Mean	14.37
Maximum	35.2	Median	7.04
SD	14.05	Std. Error of Mean	4.684
Coefficient of Variation	0.978	Skewness	0.799
Mean of logged Data	2.174	SD of logged Data	1.078

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.08	95% Adjusted-CLT UCL (Chen-1995)	23.41
		95% Modified-t UCL (Johnson-1978)	23.29

Nonparametric Distribution Free UCLs

95% CLT UCL	22.08	95% Jackknife UCL	23.08
95% Standard Bootstrap UCL	21.63	95% Bootstrap-t UCL	25.02
95% Hall's Bootstrap UCL	19.32	95% Percentile Bootstrap UCL	21.52
95% BCA Bootstrap UCL	23.65		
90% Chebyshev(Mean, Sd) UCL	28.42	95% Chebyshev(Mean, Sd) UCL	34.79
97.5% Chebyshev(Mean, Sd) UCL	43.62	99% Chebyshev(Mean, Sd) UCL	60.97

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.995	Mean	1.288
Maximum	1.67	Median	1.18
SD	0.261	Std. Error of Mean	0.0869
Coefficient of Variation	0.202	Skewness	0.649
Mean of logged Data	0.236	SD of logged Data	0.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.45	95% Adjusted-CLT UCL (Chen-1995)	1.451
		95% Modified-t UCL (Johnson-1978)	1.453

Nonparametric Distribution Free UCLs

95% CLT UCL	1.431	95% Jackknife UCL	1.45
95% Standard Bootstrap UCL	1.42	95% Bootstrap-t UCL	1.477

95% Hall's Bootstrap UCL	1.431	95% Percentile Bootstrap UCL	1.428
95% BCA Bootstrap UCL	1.444		
90% Chebyshev(Mean, Sd) UCL	1.549	95% Chebyshev(Mean, Sd) UCL	1.667
97.5% Chebyshev(Mean, Sd) UCL	1.831	99% Chebyshev(Mean, Sd) UCL	2.153

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.095	Mean	8.674
Maximum	19.7	Median	3.85
SD	7.746	Std. Error of Mean	2.582
Coefficient of Variation	0.893	Skewness	0.864
Mean of logged Data	1.816	SD of logged Data	0.851

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.48	95% Adjusted-CLT UCL (Chen-1995)	13.72
		95% Modified-t UCL (Johnson-1978)	13.6

Nonparametric Distribution Free UCLs

95% CLT UCL	12.92	95% Jackknife UCL	13.48
95% Standard Bootstrap UCL	12.61	95% Bootstrap-t UCL	14.35
95% Hall's Bootstrap UCL	11.16	95% Percentile Bootstrap UCL	12.5
95% BCA Bootstrap UCL	13.53		
90% Chebyshev(Mean, Sd) UCL	16.42	95% Chebyshev(Mean, Sd) UCL	19.93
97.5% Chebyshev(Mean, Sd) UCL	24.8	99% Chebyshev(Mean, Sd) UCL	34.37

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.93

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.095	Mean	22.5

Maximum	55.6	Median	10.6
SD	23.97	Std. Error of Mean	7.989
Coefficient of Variation	1.065	Skewness	0.799
Mean of logged Data	2.486	SD of logged Data	1.238

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.36	95% Adjusted-CLT UCL (Chen-1995)	37.91
		95% Modified-t UCL (Johnson-1978)	37.71

Nonparametric Distribution Free UCLs

95% CLT UCL	35.64	95% Jackknife UCL	37.36
95% Standard Bootstrap UCL	35.01	95% Bootstrap-t UCL	39.21
95% Hall's Bootstrap UCL	30.65	95% Percentile Bootstrap UCL	37.07
95% BCA Bootstrap UCL	34.89		
90% Chebyshev(Mean, Sd) UCL	46.47	95% Chebyshev(Mean, Sd) UCL	57.32
97.5% Chebyshev(Mean, Sd) UCL	72.39	99% Chebyshev(Mean, Sd) UCL	102

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:43:06 AM
From File	21078E_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.3	Mean	15.67
Maximum	17.5	Median	16.5
SD	1.773	Std. Error of Mean	0.591
Coefficient of Variation	0.113	Skewness	-0.857
Mean of logged Data	2.745	SD of logged Data	0.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.77	95% Adjusted-CLT UCL (Chen-1995)	16.46
		95% Modified-t UCL (Johnson-1978)	16.74

Nonparametric Distribution Free UCLs

95% CLT UCL	16.64	95% Jackknife UCL	16.77
95% Standard Bootstrap UCL	16.56	95% Bootstrap-t UCL	16.6
95% Hall's Bootstrap UCL	16.43	95% Percentile Bootstrap UCL	16.54
95% BCA Bootstrap UCL	16.48		
90% Chebyshev(Mean, Sd) UCL	17.44	95% Chebyshev(Mean, Sd) UCL	18.24
97.5% Chebyshev(Mean, Sd) UCL	19.36	99% Chebyshev(Mean, Sd) UCL	21.55

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.71	Mean	43.45
Maximum	151	Median	31.2
SD	45.19	Std. Error of Mean	15.06
Coefficient of Variation	1.04	Skewness	2.046

Mean of logged Data	3.396	SD of logged Data	0.882

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.46	95% Adjusted-CLT UCL (Chen-1995)	79.2
		95% Modified-t UCL (Johnson-1978)	73.17

Nonparametric Distribution Free UCLs

95% CLT UCL	68.22	95% Jackknife UCL	71.46
95% Standard Bootstrap UCL	67.24	95% Bootstrap-t UCL	125.1
95% Hall's Bootstrap UCL	190.8	95% Percentile Bootstrap UCL	68.23
95% BCA Bootstrap UCL	79.49		
90% Chebyshev(Mean, Sd) UCL	88.64	95% Chebyshev(Mean, Sd) UCL	109.1
97.5% Chebyshev(Mean, Sd) UCL	137.5	99% Chebyshev(Mean, Sd) UCL	193.3

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	47.3	Mean	56.81
Maximum	61.6	Median	58.5
SD	4.94	Std. Error of Mean	1.647
Coefficient of Variation	0.087	Skewness	-0.887
Mean of logged Data	4.036	SD of logged Data	0.0901

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.87	95% Adjusted-CLT UCL (Chen-1995)	59
		95% Modified-t UCL (Johnson-1978)	59.79

Nonparametric Distribution Free UCLs

95% CLT UCL	59.52	95% Jackknife UCL	59.87
95% Standard Bootstrap UCL	59.41	95% Bootstrap-t UCL	59.3
95% Hall's Bootstrap UCL	59.02	95% Percentile Bootstrap UCL	59.21
95% BCA Bootstrap UCL	59.07		
90% Chebyshev(Mean, Sd) UCL	61.75	95% Chebyshev(Mean, Sd) UCL	63.99
97.5% Chebyshev(Mean, Sd) UCL	67.09	99% Chebyshev(Mean, Sd) UCL	73.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.93	Mean	1.016
Maximum	1.18	Median	0.97
SD	0.0884	Std. Error of Mean	0.0295
Coefficient of Variation	0.087	Skewness	1.109
Mean of logged Data	0.0128	SD of logged Data	0.0841

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.071	95% Adjusted-CLT UCL (Chen-1995)	1.076
		95% Modified-t UCL (Johnson-1978)	1.073

Nonparametric Distribution Free UCLs

95% CLT UCL	1.065	95% Jackknife UCL	1.071
95% Standard Bootstrap UCL	1.062	95% Bootstrap-t UCL	1.111
95% Hall's Bootstrap UCL	1.068	95% Percentile Bootstrap UCL	1.064
95% BCA Bootstrap UCL	1.069		
90% Chebyshev(Mean, Sd) UCL	1.104	95% Chebyshev(Mean, Sd) UCL	1.145
97.5% Chebyshev(Mean, Sd) UCL	1.2	99% Chebyshev(Mean, Sd) UCL	1.309

Suggested UCL to Use

95% Student's-t UCL	1.071	or 95% Modified-t UCL	1.073

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.495	Mean	0.628
Maximum	0.952	Median	0.515
SD	0.18	Std. Error of Mean	0.06
Coefficient of Variation	0.287	Skewness	1.042
Mean of logged Data	-0.498	SD of logged Data	0.264

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.739	95% Adjusted-CLT UCL (Chen-1995)	0.749
		95% Modified-t UCL (Johnson-1978)	0.743

Nonparametric Distribution Free UCLs

95% CLT UCL	0.727	95% Jackknife UCL	0.739
95% Standard Bootstrap UCL	0.722	95% Bootstrap-t UCL	0.777
95% Hall's Bootstrap UCL	0.689	95% Percentile Bootstrap UCL	0.727
95% BCA Bootstrap UCL	0.727		
90% Chebyshev(Mean, Sd) UCL	0.808	95% Chebyshev(Mean, Sd) UCL	0.889
97.5% Chebyshev(Mean, Sd) UCL	1.003	99% Chebyshev(Mean, Sd) UCL	1.225

Suggested UCL to Use

95% Student's-t UCL	0.739	or 95% Modified-t UCL	0.743

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.01	Mean	2.202
Maximum	2.99	Median	2.1
SD	0.302	Std. Error of Mean	0.101
Coefficient of Variation	0.137	Skewness	2.784
Mean of logged Data	0.782	SD of logged Data	0.121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.389	95% Adjusted-CLT UCL (Chen-1995)	2.467
		95% Modified-t UCL (Johnson-1978)	2.404

Nonparametric Distribution Free UCLs

95% CLT UCL	2.367	95% Jackknife UCL	2.389
95% Standard Bootstrap UCL	2.358	95% Bootstrap-t UCL	3.291
95% Hall's Bootstrap UCL	3.576	95% Percentile Bootstrap UCL	2.386
95% BCA Bootstrap UCL	2.471		
90% Chebyshev(Mean, Sd) UCL	2.503	95% Chebyshev(Mean, Sd) UCL	2.64
97.5% Chebyshev(Mean, Sd) UCL	2.83	99% Chebyshev(Mean, Sd) UCL	3.202

Suggested UCL to Use

95% Student's-t UCL	2.389	or 95% Modified-t UCL	2.404

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	10.99
Maximum	30.4	Median	4.1
SD	11.78	Std. Error of Mean	3.928
Coefficient of Variation	1.072	Skewness	0.914
Mean of logged Data	1.829	SD of logged Data	1.131

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.29	95% Adjusted-CLT UCL (Chen-1995)	18.73
		95% Modified-t UCL (Johnson-1978)	18.49

Nonparametric Distribution Free UCLs

95% CLT UCL	17.45	95% Jackknife UCL	18.29
95% Standard Bootstrap UCL	17.06	95% Bootstrap-t UCL	20.11
95% Hall's Bootstrap UCL	15.03	95% Percentile Bootstrap UCL	17.32
95% BCA Bootstrap UCL	18.39		
90% Chebyshev(Mean, Sd) UCL	22.77	95% Chebyshev(Mean, Sd) UCL	28.11
97.5% Chebyshev(Mean, Sd) UCL	35.52	99% Chebyshev(Mean, Sd) UCL	50.07

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	14.06
Maximum	40.4	Median	6.02
SD	15.38	Std. Error of Mean	5.127
Coefficient of Variation	1.094	Skewness	0.941
Mean of logged Data	2.016	SD of logged Data	1.22

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.6	95% Adjusted-CLT UCL (Chen-1995)	24.21
		95% Modified-t UCL (Johnson-1978)	23.86

Nonparametric Distribution Free UCLs

95% CLT UCL	22.5	95% Jackknife UCL	23.6
95% Standard Bootstrap UCL	21.78	95% Bootstrap-t UCL	26.76
95% Hall's Bootstrap UCL	19.63	95% Percentile Bootstrap UCL	22.76
95% BCA Bootstrap UCL	22.92		
90% Chebyshev(Mean, Sd) UCL	29.44	95% Chebyshev(Mean, Sd) UCL	36.41
97.5% Chebyshev(Mean, Sd) UCL	46.08	99% Chebyshev(Mean, Sd) UCL	65.08

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	20.19
Maximum	58.6	Median	8.11
SD	22.22	Std. Error of Mean	7.407
Coefficient of Variation	1.101	Skewness	0.957
Mean of logged Data	2.385	SD of logged Data	1.199

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.96	95% Adjusted-CLT UCL (Chen-1995)	34.9
		95% Modified-t UCL (Johnson-1978)	34.36

Nonparametric Distribution Free UCLs

95% CLT UCL	32.37	95% Jackknife UCL	33.96
95% Standard Bootstrap UCL	31.83	95% Bootstrap-t UCL	37.97
95% Hall's Bootstrap UCL	28.07	95% Percentile Bootstrap UCL	32.84
95% BCA Bootstrap UCL	33.62		
90% Chebyshev(Mean, Sd) UCL	42.41	95% Chebyshev(Mean, Sd) UCL	52.48
97.5% Chebyshev(Mean, Sd) UCL	66.45	99% Chebyshev(Mean, Sd) UCL	93.89

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	10.09
Maximum	27.1	Median	3.89
SD	9.903	Std. Error of Mean	3.301
Coefficient of Variation	0.982	Skewness	0.98
Mean of logged Data	1.892	SD of logged Data	0.938

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.23	95% Adjusted-CLT UCL (Chen-1995)	16.67
		95% Modified-t UCL (Johnson-1978)	16.41

Nonparametric Distribution Free UCLs

95% CLT UCL	15.52	95% Jackknife UCL	16.23
95% Standard Bootstrap UCL	15.11	95% Bootstrap-t UCL	18.21
95% Hall's Bootstrap UCL	13.38	95% Percentile Bootstrap UCL	15.18
95% BCA Bootstrap UCL	16.64		
90% Chebyshev(Mean, Sd) UCL	19.99	95% Chebyshev(Mean, Sd) UCL	24.48
97.5% Chebyshev(Mean, Sd) UCL	30.7	99% Chebyshev(Mean, Sd) UCL	42.93

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	24.48

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	7.743
Maximum	19.9	Median	3.07
SD	7.826	Std. Error of Mean	2.609
Coefficient of Variation	1.011	Skewness	0.93
Mean of logged Data	1.584	SD of logged Data	0.994

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.59	95% Adjusted-CLT UCL (Chen-1995)	12.9
		95% Modified-t UCL (Johnson-1978)	12.73

Nonparametric Distribution Free UCLs

95% CLT UCL	12.03	95% Jackknife UCL	12.59
95% Standard Bootstrap UCL	11.86	95% Bootstrap-t UCL	14.59
95% Hall's Bootstrap UCL	10.44	95% Percentile Bootstrap UCL	11.92
95% BCA Bootstrap UCL	12.83		
90% Chebyshev(Mean, Sd) UCL	15.57	95% Chebyshev(Mean, Sd) UCL	19.11
97.5% Chebyshev(Mean, Sd) UCL	24.03	99% Chebyshev(Mean, Sd) UCL	33.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.11

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	14.71
Maximum	41.8	Median	5.72
SD	16.41	Std. Error of Mean	5.469
Coefficient of Variation	1.116	Skewness	0.906
Mean of logged Data	2.025	SD of logged Data	1.252

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.88	95% Adjusted-CLT UCL (Chen-1995)	25.47
		95% Modified-t UCL (Johnson-1978)	25.15

Nonparametric Distribution Free UCLs

95% CLT UCL	23.7	95% Jackknife UCL	24.88
95% Standard Bootstrap UCL	23.17	95% Bootstrap-t UCL	27.5
95% Hall's Bootstrap UCL	20.39	95% Percentile Bootstrap UCL	24.11
95% BCA Bootstrap UCL	24.6		
90% Chebyshev(Mean, Sd) UCL	31.11	95% Chebyshev(Mean, Sd) UCL	38.55
97.5% Chebyshev(Mean, Sd) UCL	48.86	99% Chebyshev(Mean, Sd) UCL	69.13

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.09	Mean	4.101
Maximum	6.88	Median	3.23
SD	1.42	Std. Error of Mean	0.473
Coefficient of Variation	0.346	Skewness	1.216
Mean of logged Data	1.365	SD of logged Data	0.312

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.981	95% Adjusted-CLT UCL (Chen-1995)	5.085
		95% Modified-t UCL (Johnson-1978)	5.013

Nonparametric Distribution Free UCLs

95% CLT UCL	4.88	95% Jackknife UCL	4.981
95% Standard Bootstrap UCL	4.816	95% Bootstrap-t UCL	5.428
95% Hall's Bootstrap UCL	4.676	95% Percentile Bootstrap UCL	4.902
95% BCA Bootstrap UCL	5.013		
90% Chebyshev(Mean, Sd) UCL	5.521	95% Chebyshev(Mean, Sd) UCL	6.164
97.5% Chebyshev(Mean, Sd) UCL	7.057	99% Chebyshev(Mean, Sd) UCL	8.81

Suggested UCL to Use

95% Student's-t UCL	4.981	or 95% Modified-t UCL	5.013

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	19.27
Maximum	56.3	Median	7.62
SD	21.78	Std. Error of Mean	7.26
Coefficient of Variation	1.13	Skewness	0.924
Mean of logged Data	2.226	SD of logged Data	1.357

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.77	95% Adjusted-CLT UCL (Chen-1995)	33.6
		95% Modified-t UCL (Johnson-1978)	33.14

Nonparametric Distribution Free UCLs

95% CLT UCL	31.21	95% Jackknife UCL	32.77
95% Standard Bootstrap UCL	30.71	95% Bootstrap-t UCL	37.2
95% Hall's Bootstrap UCL	27.28	95% Percentile Bootstrap UCL	30.7
95% BCA Bootstrap UCL	32.57		
90% Chebyshev(Mean, Sd) UCL	41.05	95% Chebyshev(Mean, Sd) UCL	50.91
97.5% Chebyshev(Mean, Sd) UCL	64.61	99% Chebyshev(Mean, Sd) UCL	91.51

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.2	Mean	1.278
Maximum	1.315	Median	1.29
SD	0.0377	Std. Error of Mean	0.0126
Coefficient of Variation	0.0295	Skewness	-1.38
Mean of logged Data	0.245	SD of logged Data	0.03

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.302	95% Adjusted-CLT UCL (Chen-1995)	1.293
		95% Modified-t UCL (Johnson-1978)	1.301

Nonparametric Distribution Free UCLs

95% CLT UCL	1.299	95% Jackknife UCL	1.302
95% Standard Bootstrap UCL	1.298	95% Bootstrap-t UCL	1.296
95% Hall's Bootstrap UCL	1.294	95% Percentile Bootstrap UCL	1.297
95% BCA Bootstrap UCL	1.294		
90% Chebyshev(Mean, Sd) UCL	1.316	95% Chebyshev(Mean, Sd) UCL	1.333
97.5% Chebyshev(Mean, Sd) UCL	1.357	99% Chebyshev(Mean, Sd) UCL	1.403

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	11.8
Maximum	30.7	Median	5.74
SD	11.17	Std. Error of Mean	3.724
Coefficient of Variation	0.947	Skewness	0.931
Mean of logged Data	2.062	SD of logged Data	0.942

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.72	95% Adjusted-CLT UCL (Chen-1995)	19.16
		95% Modified-t UCL (Johnson-1978)	18.91

Nonparametric Distribution Free UCLs

95% CLT UCL	17.92	95% Jackknife UCL	18.72
95% Standard Bootstrap UCL	17.5	95% Bootstrap-t UCL	20.54
95% Hall's Bootstrap UCL	15.75	95% Percentile Bootstrap UCL	17.7
95% BCA Bootstrap UCL	18.12		
90% Chebyshev(Mean, Sd) UCL	22.97	95% Chebyshev(Mean, Sd) UCL	28.03
97.5% Chebyshev(Mean, Sd) UCL	35.05	99% Chebyshev(Mean, Sd) UCL	48.85

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.93	Mean	1.485
Maximum	2.81	Median	0.97
SD	0.796	Std. Error of Mean	0.265
Coefficient of Variation	0.536	Skewness	0.951
Mean of logged Data	0.282	SD of logged Data	0.486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.978	95% Adjusted-CLT UCL (Chen-1995)	2.011
		95% Modified-t UCL (Johnson-1978)	1.992

Nonparametric Distribution Free UCLs

95% CLT UCL	1.921	95% Jackknife UCL	1.978
95% Standard Bootstrap UCL	1.898	95% Bootstrap-t UCL	2.125
95% Hall's Bootstrap UCL	1.745	95% Percentile Bootstrap UCL	1.9
95% BCA Bootstrap UCL	1.985		
90% Chebyshev(Mean, Sd) UCL	2.281	95% Chebyshev(Mean, Sd) UCL	2.641
97.5% Chebyshev(Mean, Sd) UCL	3.142	99% Chebyshev(Mean, Sd) UCL	4.125

Suggested UCL to Use

95% Student's-t UCL	1.978	or 95% Modified-t UCL	1.992

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.75	Mean	8.668
Maximum	23.3	Median	3.26
SD	8.366	Std. Error of Mean	2.789
Coefficient of Variation	0.965	Skewness	1.008
Mean of logged Data	1.762	SD of logged Data	0.91

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.85	95% Adjusted-CLT UCL (Chen-1995)	14.26
		95% Modified-t UCL (Johnson-1978)	14.01

Nonparametric Distribution Free UCLs

95% CLT UCL	13.26	95% Jackknife UCL	13.85
95% Standard Bootstrap UCL	12.99	95% Bootstrap-t UCL	15.75
95% Hall's Bootstrap UCL	11.47	95% Percentile Bootstrap UCL	13.24
95% BCA Bootstrap UCL	13.82		
90% Chebyshev(Mean, Sd) UCL	17.03	95% Chebyshev(Mean, Sd) UCL	20.82
97.5% Chebyshev(Mean, Sd) UCL	26.08	99% Chebyshev(Mean, Sd) UCL	36.42

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	20.82

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.195	Mean	19.04
Maximum	54.3	Median	7.1
SD	20.87	Std. Error of Mean	6.956
Coefficient of Variation	1.096	Skewness	0.936
Mean of logged Data	2.337	SD of logged Data	1.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.97	95% Adjusted-CLT UCL (Chen-1995)	32.8
		95% Modified-t UCL (Johnson-1978)	32.34

Nonparametric Distribution Free UCLs

95% CLT UCL	30.48	95% Jackknife UCL	31.97
95% Standard Bootstrap UCL	29.67	95% Bootstrap-t UCL	35.51
95% Hall's Bootstrap UCL	26.4	95% Percentile Bootstrap UCL	29.54
95% BCA Bootstrap UCL	32.29		
90% Chebyshev(Mean, Sd) UCL	39.91	95% Chebyshev(Mean, Sd) UCL	49.36
97.5% Chebyshev(Mean, Sd) UCL	62.48	99% Chebyshev(Mean, Sd) UCL	88.25

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:47:30 AM
From File	21078F_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.6	Mean	15.3
Maximum	16.8	Median	15.7
SD	1.095	Std. Error of Mean	0.365
Coefficient of Variation	0.0716	Skewness	-0.222
Mean of logged Data	2.726	SD of logged Data	0.0723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.98	95% Adjusted-CLT UCL (Chen-1995)	15.87
		95% Modified-t UCL (Johnson-1978)	15.97

Nonparametric Distribution Free UCLs

95% CLT UCL	15.9	95% Jackknife UCL	15.98
95% Standard Bootstrap UCL	15.86	95% Bootstrap-t UCL	15.96
95% Hall's Bootstrap UCL	15.82	95% Percentile Bootstrap UCL	15.87
95% BCA Bootstrap UCL	15.83		
90% Chebyshev(Mean, Sd) UCL	16.4	95% Chebyshev(Mean, Sd) UCL	16.89
97.5% Chebyshev(Mean, Sd) UCL	17.58	99% Chebyshev(Mean, Sd) UCL	18.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10	Mean	27.01
Maximum	90.5	Median	16.4
SD	25.83	Std. Error of Mean	8.609
Coefficient of Variation	0.956	Skewness	2.258

Mean of logged Data	3.019	SD of logged Data	0.723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.02	95% Adjusted-CLT UCL (Chen-1995)	48.1
		95% Modified-t UCL (Johnson-1978)	44.1

Nonparametric Distribution Free UCLs

95% CLT UCL	41.17	95% Jackknife UCL	43.02
95% Standard Bootstrap UCL	40.48	95% Bootstrap-t UCL	74.54
95% Hall's Bootstrap UCL	91.93	95% Percentile Bootstrap UCL	41.54
95% BCA Bootstrap UCL	49.43		
90% Chebyshev(Mean, Sd) UCL	52.84	95% Chebyshev(Mean, Sd) UCL	64.54
97.5% Chebyshev(Mean, Sd) UCL	80.78	99% Chebyshev(Mean, Sd) UCL	112.7

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.8	Mean	50.7
Maximum	56.6	Median	50.9
SD	3.738	Std. Error of Mean	1.246
Coefficient of Variation	0.0737	Skewness	0.383
Mean of logged Data	3.924	SD of logged Data	0.0732

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.02	95% Adjusted-CLT UCL (Chen-1995)	52.92
		95% Modified-t UCL (Johnson-1978)	53.04

Nonparametric Distribution Free UCLs

95% CLT UCL	52.75	95% Jackknife UCL	53.02
95% Standard Bootstrap UCL	52.63	95% Bootstrap-t UCL	53.29
95% Hall's Bootstrap UCL	53.26	95% Percentile Bootstrap UCL	52.78
95% BCA Bootstrap UCL	52.64		
90% Chebyshev(Mean, Sd) UCL	54.44	95% Chebyshev(Mean, Sd) UCL	56.13
97.5% Chebyshev(Mean, Sd) UCL	58.48	99% Chebyshev(Mean, Sd) UCL	63.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.774	Mean	0.876
Maximum	0.995	Median	0.848
SD	0.0938	Std. Error of Mean	0.0313
Coefficient of Variation	0.107	Skewness	0.294
Mean of logged Data	-0.138	SD of logged Data	0.106

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.934	95% Adjusted-CLT UCL (Chen-1995)	0.93
		95% Modified-t UCL (Johnson-1978)	0.934

Nonparametric Distribution Free UCLs

95% CLT UCL	0.927	95% Jackknife UCL	0.934
95% Standard Bootstrap UCL	0.924	95% Bootstrap-t UCL	0.941
95% Hall's Bootstrap UCL	0.915	95% Percentile Bootstrap UCL	0.924
95% BCA Bootstrap UCL	0.927		
90% Chebyshev(Mean, Sd) UCL	0.969	95% Chebyshev(Mean, Sd) UCL	1.012
97.5% Chebyshev(Mean, Sd) UCL	1.071	99% Chebyshev(Mean, Sd) UCL	1.187

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.347	Mean	0.507
Maximum	0.599	Median	0.525
SD	0.0682	Std. Error of Mean	0.0227
Coefficient of Variation	0.135	Skewness	-1.655
Mean of logged Data	-0.689	SD of logged Data	0.151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.549	95% Adjusted-CLT UCL (Chen-1995)	0.531
		95% Modified-t UCL (Johnson-1978)	0.547

Nonparametric Distribution Free UCLs

95% CLT UCL	0.544	95% Jackknife UCL	0.549
95% Standard Bootstrap UCL	0.541	95% Bootstrap-t UCL	0.537
95% Hall's Bootstrap UCL	0.536	95% Percentile Bootstrap UCL	0.539
95% BCA Bootstrap UCL	0.534		
90% Chebyshev(Mean, Sd) UCL	0.575	95% Chebyshev(Mean, Sd) UCL	0.606
97.5% Chebyshev(Mean, Sd) UCL	0.649	99% Chebyshev(Mean, Sd) UCL	0.733

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.54	Mean	2.026
Maximum	2.16	Median	2.125
SD	0.209	Std. Error of Mean	0.0697
Coefficient of Variation	0.103	Skewness	-1.994
Mean of logged Data	0.701	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.156	95% Adjusted-CLT UCL (Chen-1995)	2.091
		95% Modified-t UCL (Johnson-1978)	2.148

Nonparametric Distribution Free UCLs

95% CLT UCL	2.141	95% Jackknife UCL	2.156
95% Standard Bootstrap UCL	2.136	95% Bootstrap-t UCL	2.119
95% Hall's Bootstrap UCL	2.103	95% Percentile Bootstrap UCL	2.123
95% BCA Bootstrap UCL	2.102		
90% Chebyshev(Mean, Sd) UCL	2.235	95% Chebyshev(Mean, Sd) UCL	2.33
97.5% Chebyshev(Mean, Sd) UCL	2.462	99% Chebyshev(Mean, Sd) UCL	2.72

Suggested UCL to Use

95% Student's-t UCL	2.156	or 95% Modified-t UCL	2.148

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.13	Mean	7.72
Maximum	17.6	Median	5.76
SD	5.877	Std. Error of Mean	1.959
Coefficient of Variation	0.761	Skewness	0.701
Mean of logged Data	1.749	SD of logged Data	0.847

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.36	95% Adjusted-CLT UCL (Chen-1995)	11.43
		95% Modified-t UCL (Johnson-1978)	11.44

Nonparametric Distribution Free UCLs

95% CLT UCL	10.94	95% Jackknife UCL	11.36
95% Standard Bootstrap UCL	10.78	95% Bootstrap-t UCL	12.2
95% Hall's Bootstrap UCL	10.6	95% Percentile Bootstrap UCL	10.75
95% BCA Bootstrap UCL	11.17		
90% Chebyshev(Mean, Sd) UCL	13.6	95% Chebyshev(Mean, Sd) UCL	16.26
97.5% Chebyshev(Mean, Sd) UCL	19.95	99% Chebyshev(Mean, Sd) UCL	27.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.13	Mean	10.7
Maximum	23.7	Median	8.28
SD	8.551	Std. Error of Mean	2.85
Coefficient of Variation	0.799	Skewness	0.524
Mean of logged Data	1.989	SD of logged Data	1.003

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16	95% Adjusted-CLT UCL (Chen-1995)	15.92
		95% Modified-t UCL (Johnson-1978)	16.08

Nonparametric Distribution Free UCLs

95% CLT UCL	15.38	95% Jackknife UCL	16
95% Standard Bootstrap UCL	15.11	95% Bootstrap-t UCL	16.8
95% Hall's Bootstrap UCL	14.82	95% Percentile Bootstrap UCL	15.28
95% BCA Bootstrap UCL	15.61		
90% Chebyshev(Mean, Sd) UCL	19.25	95% Chebyshev(Mean, Sd) UCL	23.12
97.5% Chebyshev(Mean, Sd) UCL	28.5	99% Chebyshev(Mean, Sd) UCL	39.06

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.28	Mean	15.94
Maximum	36.2	Median	13.2
SD	12.64	Std. Error of Mean	4.215
Coefficient of Variation	0.793	Skewness	0.556
Mean of logged Data	2.399	SD of logged Data	0.986

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.78	95% Adjusted-CLT UCL (Chen-1995)	23.71
		95% Modified-t UCL (Johnson-1978)	23.91

Nonparametric Distribution Free UCLs

95% CLT UCL	22.88	95% Jackknife UCL	23.78
95% Standard Bootstrap UCL	22.38	95% Bootstrap-t UCL	25.31
95% Hall's Bootstrap UCL	22.11	95% Percentile Bootstrap UCL	22.82
95% BCA Bootstrap UCL	22.83		
90% Chebyshev(Mean, Sd) UCL	28.59	95% Chebyshev(Mean, Sd) UCL	34.31
97.5% Chebyshev(Mean, Sd) UCL	42.26	99% Chebyshev(Mean, Sd) UCL	57.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.28	Mean	9.768
Maximum	20.5	Median	7.84
SD	6.565	Std. Error of Mean	2.188
Coefficient of Variation	0.672	Skewness	0.601
Mean of logged Data	2.054	SD of logged Data	0.735

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.84	95% Adjusted-CLT UCL (Chen-1995)	13.84
		95% Modified-t UCL (Johnson-1978)	13.91

Nonparametric Distribution Free UCLs

95% CLT UCL	13.37	95% Jackknife UCL	13.84
95% Standard Bootstrap UCL	13.16	95% Bootstrap-t UCL	14.39
95% Hall's Bootstrap UCL	13.03	95% Percentile Bootstrap UCL	13.49
95% BCA Bootstrap UCL	13.73		
90% Chebyshev(Mean, Sd) UCL	16.33	95% Chebyshev(Mean, Sd) UCL	19.31
97.5% Chebyshev(Mean, Sd) UCL	23.43	99% Chebyshev(Mean, Sd) UCL	31.54

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.13	Mean	6.063
Maximum	14	Median	4.29
SD	4.39	Std. Error of Mean	1.463
Coefficient of Variation	0.724	Skewness	0.903
Mean of logged Data	1.565	SD of logged Data	0.734

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.784	95% Adjusted-CLT UCL (Chen-1995)	8.941
		95% Modified-t UCL (Johnson-1978)	8.858

Nonparametric Distribution Free UCLs

95% CLT UCL	8.47	95% Jackknife UCL	8.784
95% Standard Bootstrap UCL	8.357	95% Bootstrap-t UCL	9.73
95% Hall's Bootstrap UCL	8.691	95% Percentile Bootstrap UCL	8.389
95% BCA Bootstrap UCL	8.628		
90% Chebyshev(Mean, Sd) UCL	10.45	95% Chebyshev(Mean, Sd) UCL	12.44
97.5% Chebyshev(Mean, Sd) UCL	15.2	99% Chebyshev(Mean, Sd) UCL	20.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.13	Mean	11.04
Maximum	25.5	Median	8.81
SD	9.02	Std. Error of Mean	3.007
Coefficient of Variation	0.817	Skewness	0.593
Mean of logged Data	2.007	SD of logged Data	1.021

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.63	95% Adjusted-CLT UCL (Chen-1995)	16.62
		95% Modified-t UCL (Johnson-1978)	16.73

Nonparametric Distribution Free UCLs

95% CLT UCL	15.98	95% Jackknife UCL	16.63
95% Standard Bootstrap UCL	15.88	95% Bootstrap-t UCL	17.44
95% Hall's Bootstrap UCL	15.93	95% Percentile Bootstrap UCL	15.82
95% BCA Bootstrap UCL	16.81		
90% Chebyshev(Mean, Sd) UCL	20.06	95% Chebyshev(Mean, Sd) UCL	24.14
97.5% Chebyshev(Mean, Sd) UCL	29.81	99% Chebyshev(Mean, Sd) UCL	40.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	3.643
Maximum	4.96	Median	3.29
SD	0.637	Std. Error of Mean	0.212
Coefficient of Variation	0.175	Skewness	1.436
Mean of logged Data	1.281	SD of logged Data	0.162

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.038	95% Adjusted-CLT UCL (Chen-1995)	4.101
		95% Modified-t UCL (Johnson-1978)	4.055

Nonparametric Distribution Free UCLs

95% CLT UCL	3.992	95% Jackknife UCL	4.038
95% Standard Bootstrap UCL	3.97	95% Bootstrap-t UCL	4.502
95% Hall's Bootstrap UCL	4.08	95% Percentile Bootstrap UCL	4.007
95% BCA Bootstrap UCL	4.084		
90% Chebyshev(Mean, Sd) UCL	4.28	95% Chebyshev(Mean, Sd) UCL	4.568
97.5% Chebyshev(Mean, Sd) UCL	4.969	99% Chebyshev(Mean, Sd) UCL	5.755

Suggested UCL to Use

95% Student's-t UCL	4.038	or 95% Modified-t UCL	4.055

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	13.09
Maximum	31.4	Median	10.5
SD	11.01	Std. Error of Mean	3.669
Coefficient of Variation	0.841	Skewness	0.605
Mean of logged Data	2.127	SD of logged Data	1.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.91	95% Adjusted-CLT UCL (Chen-1995)	19.91
		95% Modified-t UCL (Johnson-1978)	20.03

Nonparametric Distribution Free UCLs

95% CLT UCL	19.12	95% Jackknife UCL	19.91
95% Standard Bootstrap UCL	18.73	95% Bootstrap-t UCL	21.06
95% Hall's Bootstrap UCL	19.07	95% Percentile Bootstrap UCL	18.66
95% BCA Bootstrap UCL	19.32		
90% Chebyshev(Mean, Sd) UCL	24.09	95% Chebyshev(Mean, Sd) UCL	29.08
97.5% Chebyshev(Mean, Sd) UCL	36	99% Chebyshev(Mean, Sd) UCL	49.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.26	Mean	1.307
Maximum	1.33	Median	1.31
SD	0.0222	Std. Error of Mean	0.00741
Coefficient of Variation	0.017	Skewness	-1.158
Mean of logged Data	0.268	SD of logged Data	0.0171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.321	95% Adjusted-CLT UCL (Chen-1995)	1.316
		95% Modified-t UCL (Johnson-1978)	1.321

Nonparametric Distribution Free UCLs

95% CLT UCL	1.319	95% Jackknife UCL	1.321
95% Standard Bootstrap UCL	1.319	95% Bootstrap-t UCL	1.319
95% Hall's Bootstrap UCL	1.317	95% Percentile Bootstrap UCL	1.318
95% BCA Bootstrap UCL	1.316		
90% Chebyshev(Mean, Sd) UCL	1.329	95% Chebyshev(Mean, Sd) UCL	1.34
97.5% Chebyshev(Mean, Sd) UCL	1.354	99% Chebyshev(Mean, Sd) UCL	1.381

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.28	Mean	10.2
Maximum	20.9	Median	8.52
SD	6.898	Std. Error of Mean	2.299
Coefficient of Variation	0.676	Skewness	0.535
Mean of logged Data	2.088	SD of logged Data	0.755

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.48	95% Adjusted-CLT UCL (Chen-1995)	14.42
		95% Modified-t UCL (Johnson-1978)	14.54

Nonparametric Distribution Free UCLs

95% CLT UCL	13.98	95% Jackknife UCL	14.48
95% Standard Bootstrap UCL	13.79	95% Bootstrap-t UCL	15.29
95% Hall's Bootstrap UCL	13.46	95% Percentile Bootstrap UCL	13.79
95% BCA Bootstrap UCL	14.01		
90% Chebyshev(Mean, Sd) UCL	17.1	95% Chebyshev(Mean, Sd) UCL	20.22
97.5% Chebyshev(Mean, Sd) UCL	24.56	99% Chebyshev(Mean, Sd) UCL	33.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.985	Mean	1.317
Maximum	1.75	Median	1.2
SD	0.3	Std. Error of Mean	0.1
Coefficient of Variation	0.228	Skewness	0.318
Mean of logged Data	0.252	SD of logged Data	0.227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1.503	95% Adjusted-CLT UCL (Chen-1995)	1.493
		95% Modified-t UCL (Johnson-1978)	1.505

Nonparametric Distribution Free UCLs

95% CLT UCL	1.481	95% Jackknife UCL	1.503
95% Standard Bootstrap UCL	1.472	95% Bootstrap-t UCL	1.54
95% Hall's Bootstrap UCL	1.451	95% Percentile Bootstrap UCL	1.468
95% BCA Bootstrap UCL	1.486		
90% Chebyshev(Mean, Sd) UCL	1.617	95% Chebyshev(Mean, Sd) UCL	1.753
97.5% Chebyshev(Mean, Sd) UCL	1.942	99% Chebyshev(Mean, Sd) UCL	2.313

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.28	Mean	5.833
Maximum	11.8	Median	4.46
SD	3.106	Std. Error of Mean	1.035
Coefficient of Variation	0.533	Skewness	1.088
Mean of logged Data	1.651	SD of logged Data	0.488

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.759	95% Adjusted-CLT UCL (Chen-1995)	7.938
		95% Modified-t UCL (Johnson-1978)	7.821

Nonparametric Distribution Free UCLs

95% CLT UCL	7.537	95% Jackknife UCL	7.759
95% Standard Bootstrap UCL	7.482	95% Bootstrap-t UCL	8.649
95% Hall's Bootstrap UCL	7.351	95% Percentile Bootstrap UCL	7.373
95% BCA Bootstrap UCL	7.624		
90% Chebyshev(Mean, Sd) UCL	8.94	95% Chebyshev(Mean, Sd) UCL	10.35
97.5% Chebyshev(Mean, Sd) UCL	12.3	99% Chebyshev(Mean, Sd) UCL	16.14

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.28	Mean	14.18
Maximum	32.5	Median	10.7
SD	11.16	Std. Error of Mean	3.721
Coefficient of Variation	0.788	Skewness	0.637
Mean of logged Data	2.31	SD of logged Data	0.931

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.1	95% Adjusted-CLT UCL (Chen-1995)	21.14
		95% Modified-t UCL (Johnson-1978)	21.23

Nonparametric Distribution Free UCLs

95% CLT UCL	20.3	95% Jackknife UCL	21.1
95% Standard Bootstrap UCL	20.13	95% Bootstrap-t UCL	22.35
95% Hall's Bootstrap UCL	19.95	95% Percentile Bootstrap UCL	20.06
95% BCA Bootstrap UCL	20.64		
90% Chebyshev(Mean, Sd) UCL	25.34	95% Chebyshev(Mean, Sd) UCL	30.4
97.5% Chebyshev(Mean, Sd) UCL	37.42	99% Chebyshev(Mean, Sd) UCL	51.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:48:53 AM
From File	21078G_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.5	Mean	12.7
Maximum	14.6	Median	12.3
SD	1.069	Std. Error of Mean	0.356
Coefficient of Variation	0.0842	Skewness	1.105
Mean of logged Data	2.539	SD of logged Data	0.0816

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.36	95% Adjusted-CLT UCL (Chen-1995)	13.43
		95% Modified-t UCL (Johnson-1978)	13.38

Nonparametric Distribution Free UCLs

95% CLT UCL	13.29	95% Jackknife UCL	13.36
95% Standard Bootstrap UCL	13.24	95% Bootstrap-t UCL	14.1
95% Hall's Bootstrap UCL	14.58	95% Percentile Bootstrap UCL	13.3
95% BCA Bootstrap UCL	13.39		
90% Chebyshev(Mean, Sd) UCL	13.77	95% Chebyshev(Mean, Sd) UCL	14.25
97.5% Chebyshev(Mean, Sd) UCL	14.93	99% Chebyshev(Mean, Sd) UCL	16.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.9	Mean	31.57
Maximum	88	Median	21.3
SD	28.33	Std. Error of Mean	9.443
Coefficient of Variation	0.897	Skewness	1.523
Mean of logged Data	3.16	SD of logged Data	0.768

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.13	95% Adjusted-CLT UCL (Chen-1995)	52.22
		95% Modified-t UCL (Johnson-1978)	49.93

Nonparametric Distribution Free UCLs

95% CLT UCL	47.1	95% Jackknife UCL	49.13
95% Standard Bootstrap UCL	45.96	95% Bootstrap-t UCL	93.26
95% Hall's Bootstrap UCL	147.9	95% Percentile Bootstrap UCL	47.19
95% BCA Bootstrap UCL	51.59		
90% Chebyshev(Mean, Sd) UCL	59.9	95% Chebyshev(Mean, Sd) UCL	72.73
97.5% Chebyshev(Mean, Sd) UCL	90.54	99% Chebyshev(Mean, Sd) UCL	125.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	43.9	Mean	49.49
Maximum	59.4	Median	48.6
SD	5.118	Std. Error of Mean	1.706
Coefficient of Variation	0.103	Skewness	0.987
Mean of logged Data	3.897	SD of logged Data	0.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.66	95% Adjusted-CLT UCL (Chen-1995)	52.89
		95% Modified-t UCL (Johnson-1978)	52.75

Nonparametric Distribution Free UCLs

95% CLT UCL	52.29	95% Jackknife UCL	52.66
95% Standard Bootstrap UCL	52.14	95% Bootstrap-t UCL	53.91
95% Hall's Bootstrap UCL	54.26	95% Percentile Bootstrap UCL	52.31
95% BCA Bootstrap UCL	52.73		
90% Chebyshev(Mean, Sd) UCL	54.61	95% Chebyshev(Mean, Sd) UCL	56.92
97.5% Chebyshev(Mean, Sd) UCL	60.14	99% Chebyshev(Mean, Sd) UCL	66.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.623	Mean	1.071
Maximum	2.25	Median	0.96
SD	0.457	Std. Error of Mean	0.152
Coefficient of Variation	0.426	Skewness	2.596
Mean of logged Data	0.0114	SD of logged Data	0.334

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.355	95% Adjusted-CLT UCL (Chen-1995)	1.463
		95% Modified-t UCL (Johnson-1978)	1.376

Nonparametric Distribution Free UCLs

95% CLT UCL	1.322	95% Jackknife UCL	1.355
95% Standard Bootstrap UCL	1.311	95% Bootstrap-t UCL	3.83
95% Hall's Bootstrap UCL	3.162	95% Percentile Bootstrap UCL	1.359
95% BCA Bootstrap UCL	1.465		
90% Chebyshev(Mean, Sd) UCL	1.528	95% Chebyshev(Mean, Sd) UCL	1.735
97.5% Chebyshev(Mean, Sd) UCL	2.022	99% Chebyshev(Mean, Sd) UCL	2.586

Suggested UCL to Use

95% Student's-t UCL	1.355	or 95% Modified-t UCL	1.376

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.499	Mean	0.687
Maximum	1.43	Median	0.52
SD	0.313	Std. Error of Mean	0.104
Coefficient of Variation	0.456	Skewness	2.018
Mean of logged Data	-0.445	SD of logged Data	0.37

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.881	95% Adjusted-CLT UCL (Chen-1995)	0.934
		95% Modified-t UCL (Johnson-1978)	0.893

Nonparametric Distribution Free UCLs

95% CLT UCL	0.859	95% Jackknife UCL	0.881
95% Standard Bootstrap UCL	0.847	95% Bootstrap-t UCL	1.128
95% Hall's Bootstrap UCL	1.313	95% Percentile Bootstrap UCL	0.859
95% BCA Bootstrap UCL	0.899		
90% Chebyshev(Mean, Sd) UCL	1	95% Chebyshev(Mean, Sd) UCL	1.142
97.5% Chebyshev(Mean, Sd) UCL	1.339	99% Chebyshev(Mean, Sd) UCL	1.726

Suggested UCL to Use

95% Student's-t UCL	0.881	or 95% Modified-t UCL	0.893

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.025	Mean	2.435
Maximum	4.03	Median	2.12
SD	0.681	Std. Error of Mean	0.227
Coefficient of Variation	0.279	Skewness	2.064
Mean of logged Data	0.862	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.857	95% Adjusted-CLT UCL (Chen-1995)	2.975
		95% Modified-t UCL (Johnson-1978)	2.883

Nonparametric Distribution Free UCLs

95% CLT UCL	2.808	95% Jackknife UCL	2.857
95% Standard Bootstrap UCL	2.789	95% Bootstrap-t UCL	5.16
95% Hall's Bootstrap UCL	4.787	95% Percentile Bootstrap UCL	2.843
95% BCA Bootstrap UCL	2.973		
90% Chebyshev(Mean, Sd) UCL	3.116	95% Chebyshev(Mean, Sd) UCL	3.424
97.5% Chebyshev(Mean, Sd) UCL	3.852	99% Chebyshev(Mean, Sd) UCL	4.692

Suggested UCL to Use

95% Student's-t UCL	2.857	or 95% Modified-t UCL	2.883

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	12.17
Maximum	36	Median	4.8
SD	13.37	Std. Error of Mean	4.458
Coefficient of Variation	1.099	Skewness	1.01
Mean of logged Data	1.896	SD of logged Data	1.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.46	95% Adjusted-CLT UCL (Chen-1995)	21.1
		95% Modified-t UCL (Johnson-1978)	20.71

Nonparametric Distribution Free UCLs

95% CLT UCL	19.5	95% Jackknife UCL	20.46
95% Standard Bootstrap UCL	19.05	95% Bootstrap-t UCL	23.29
95% Hall's Bootstrap UCL	17.3	95% Percentile Bootstrap UCL	19.23
95% BCA Bootstrap UCL	20.29		
90% Chebyshev(Mean, Sd) UCL	25.54	95% Chebyshev(Mean, Sd) UCL	31.6
97.5% Chebyshev(Mean, Sd) UCL	40.01	99% Chebyshev(Mean, Sd) UCL	56.52

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	13.94
Maximum	39.6	Median	6.48
SD	14.93	Std. Error of Mean	4.978
Coefficient of Variation	1.071	Skewness	0.945
Mean of logged Data	2.029	SD of logged Data	1.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	23.2	95% Adjusted-CLT UCL (Chen-1995)	23.8
		95% Modified-t UCL (Johnson-1978)	23.46

Nonparametric Distribution Free UCLs

95% CLT UCL	22.13	95% Jackknife UCL	23.2
95% Standard Bootstrap UCL	21.78	95% Bootstrap-t UCL	25.83
95% Hall's Bootstrap UCL	19.88	95% Percentile Bootstrap UCL	22.11
95% BCA Bootstrap UCL	22.91		
90% Chebyshev(Mean, Sd) UCL	28.88	95% Chebyshev(Mean, Sd) UCL	35.64
97.5% Chebyshev(Mean, Sd) UCL	45.03	99% Chebyshev(Mean, Sd) UCL	63.47

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	22.58
Maximum	63.2	Median	9.61
SD	24.35	Std. Error of Mean	8.118
Coefficient of Variation	1.079	Skewness	0.896
Mean of logged Data	2.488	SD of logged Data	1.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.67	95% Adjusted-CLT UCL (Chen-1995)	38.52
		95% Modified-t UCL (Johnson-1978)	38.08

Nonparametric Distribution Free UCLs

95% CLT UCL	35.93	95% Jackknife UCL	37.67
95% Standard Bootstrap UCL	35.28	95% Bootstrap-t UCL	41.5
95% Hall's Bootstrap UCL	31.66	95% Percentile Bootstrap UCL	36.15
95% BCA Bootstrap UCL	37.54		
90% Chebyshev(Mean, Sd) UCL	46.93	95% Chebyshev(Mean, Sd) UCL	57.96
97.5% Chebyshev(Mean, Sd) UCL	73.27	99% Chebyshev(Mean, Sd) UCL	103.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	12.84
Maximum	34.9	Median	5.13
SD	12.89	Std. Error of Mean	4.296
Coefficient of Variation	1.004	Skewness	0.955
Mean of logged Data	2.089	SD of logged Data	1.006

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.83	95% Adjusted-CLT UCL (Chen-1995)	21.37
		95% Modified-t UCL (Johnson-1978)	21.06

Nonparametric Distribution Free UCLs

95% CLT UCL	19.91	95% Jackknife UCL	20.83
95% Standard Bootstrap UCL	19.64	95% Bootstrap-t UCL	23.08
95% Hall's Bootstrap UCL	17.38	95% Percentile Bootstrap UCL	19.68
95% BCA Bootstrap UCL	20.86		
90% Chebyshev(Mean, Sd) UCL	25.73	95% Chebyshev(Mean, Sd) UCL	31.57
97.5% Chebyshev(Mean, Sd) UCL	39.67	99% Chebyshev(Mean, Sd) UCL	55.58

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	8.769
Maximum	25.9	Median	3.72
SD	9.192	Std. Error of Mean	3.064
Coefficient of Variation	1.048	Skewness	1.09
Mean of logged Data	1.676	SD of logged Data	1.035

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.47	95% Adjusted-CLT UCL (Chen-1995)	15
		95% Modified-t UCL (Johnson-1978)	14.65

Nonparametric Distribution Free UCLs

95% CLT UCL	13.81	95% Jackknife UCL	14.47
95% Standard Bootstrap UCL	13.29	95% Bootstrap-t UCL	16.55
95% Hall's Bootstrap UCL	12.13	95% Percentile Bootstrap UCL	13.9
95% BCA Bootstrap UCL	14.17		
90% Chebyshev(Mean, Sd) UCL	17.96	95% Chebyshev(Mean, Sd) UCL	22.13
97.5% Chebyshev(Mean, Sd) UCL	27.91	99% Chebyshev(Mean, Sd) UCL	39.26

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	15.62
Maximum	44.9	Median	6.8
SD	16.99	Std. Error of Mean	5.663
Coefficient of Variation	1.087	Skewness	0.932
Mean of logged Data	2.104	SD of logged Data	1.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.15	95% Adjusted-CLT UCL (Chen-1995)	26.82
		95% Modified-t UCL (Johnson-1978)	26.45

Nonparametric Distribution Free UCLs

95% CLT UCL	24.94	95% Jackknife UCL	26.15
95% Standard Bootstrap UCL	24.36	95% Bootstrap-t UCL	28.97
95% Hall's Bootstrap UCL	22.01	95% Percentile Bootstrap UCL	24.89
95% BCA Bootstrap UCL	26.26		
90% Chebyshev(Mean, Sd) UCL	32.61	95% Chebyshev(Mean, Sd) UCL	40.31
97.5% Chebyshev(Mean, Sd) UCL	50.99	99% Chebyshev(Mean, Sd) UCL	71.97

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.65	Mean	5.143

Maximum	11.3	Median	3.26
SD	3.217	Std. Error of Mean	1.072
Coefficient of Variation	0.626	Skewness	1.229
Mean of logged Data	1.49	SD of logged Data	0.549

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.137	95% Adjusted-CLT UCL (Chen-1995)	7.376
		95% Modified-t UCL (Johnson-1978)	7.21

Nonparametric Distribution Free UCLs

95% CLT UCL	6.907	95% Jackknife UCL	7.137
95% Standard Bootstrap UCL	6.78	95% Bootstrap-t UCL	8.877
95% Hall's Bootstrap UCL	6.548	95% Percentile Bootstrap UCL	6.887
95% BCA Bootstrap UCL	7.25		
90% Chebyshev(Mean, Sd) UCL	8.36	95% Chebyshev(Mean, Sd) UCL	9.818
97.5% Chebyshev(Mean, Sd) UCL	11.84	99% Chebyshev(Mean, Sd) UCL	15.81

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.818

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	23.43
Maximum	67.6	Median	10.7
SD	26.3	Std. Error of Mean	8.768
Coefficient of Variation	1.122	Skewness	0.912
Mean of logged Data	2.38	SD of logged Data	1.436

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.74	95% Adjusted-CLT UCL (Chen-1995)	40.7
		95% Modified-t UCL (Johnson-1978)	40.18

Nonparametric Distribution Free UCLs

95% CLT UCL	37.86	95% Jackknife UCL	39.74
95% Standard Bootstrap UCL	37.26	95% Bootstrap-t UCL	44.44
95% Hall's Bootstrap UCL	34.2	95% Percentile Bootstrap UCL	37.03
95% BCA Bootstrap UCL	39.28		

90% Chebyshev(Mean, Sd) UCL	49.74	95% Chebyshev(Mean, Sd) UCL	61.65
97.5% Chebyshev(Mean, Sd) UCL	78.19	99% Chebyshev(Mean, Sd) UCL	110.7

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.25	Mean	1.297
Maximum	1.325	Median	1.305
SD	0.0258	Std. Error of Mean	0.00858
Coefficient of Variation	0.0199	Skewness	-0.654
Mean of logged Data	0.26	SD of logged Data	0.02

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.313	95% Adjusted-CLT UCL (Chen-1995)	1.309
		95% Modified-t UCL (Johnson-1978)	1.313

Nonparametric Distribution Free UCLs

95% CLT UCL	1.311	95% Jackknife UCL	1.313
95% Standard Bootstrap UCL	1.31	95% Bootstrap-t UCL	1.311
95% Hall's Bootstrap UCL	1.309	95% Percentile Bootstrap UCL	1.311
95% BCA Bootstrap UCL	1.309		
90% Chebyshev(Mean, Sd) UCL	1.323	95% Chebyshev(Mean, Sd) UCL	1.335
97.5% Chebyshev(Mean, Sd) UCL	1.351	99% Chebyshev(Mean, Sd) UCL	1.383

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	13.98
Maximum	39.5	Median	5.99

SD	14.29	Std. Error of Mean	4.764
Coefficient of Variation	1.022	Skewness	1.017
Mean of logged Data	2.155	SD of logged Data	1.032

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.84	95% Adjusted-CLT UCL (Chen-1995)	23.54
		95% Modified-t UCL (Johnson-1978)	23.11

Nonparametric Distribution Free UCLs

95% CLT UCL	21.82	95% Jackknife UCL	22.84
95% Standard Bootstrap UCL	21.38	95% Bootstrap-t UCL	26.33
95% Hall's Bootstrap UCL	19.45	95% Percentile Bootstrap UCL	21.66
95% BCA Bootstrap UCL	22.93		
90% Chebyshev(Mean, Sd) UCL	28.27	95% Chebyshev(Mean, Sd) UCL	34.75
97.5% Chebyshev(Mean, Sd) UCL	43.73	99% Chebyshev(Mean, Sd) UCL	61.39

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.935	Mean	1.032
Maximum	1.28	Median	0.98
SD	0.131	Std. Error of Mean	0.0435
Coefficient of Variation	0.126	Skewness	1.573
Mean of logged Data	0.0253	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.113	95% Adjusted-CLT UCL (Chen-1995)	1.128
		95% Modified-t UCL (Johnson-1978)	1.117

Nonparametric Distribution Free UCLs

95% CLT UCL	1.104	95% Jackknife UCL	1.113
95% Standard Bootstrap UCL	1.101	95% Bootstrap-t UCL	1.557
95% Hall's Bootstrap UCL	1.758	95% Percentile Bootstrap UCL	1.099
95% BCA Bootstrap UCL	1.123		
90% Chebyshev(Mean, Sd) UCL	1.163	95% Chebyshev(Mean, Sd) UCL	1.222

97.5% Chebyshev(Mean, Sd) UCL	1.304	99% Chebyshev(Mean, Sd) UCL	1.465

Suggested UCL to Use

95% Student's-t UCL	1.113	or 95% Modified-t UCL	1.117

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	9.14
Maximum	24.8	Median	3.93
SD	8.627	Std. Error of Mean	2.876
Coefficient of Variation	0.944	Skewness	1.07
Mean of logged Data	1.84	SD of logged Data	0.881

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.49	95% Adjusted-CLT UCL (Chen-1995)	14.97
		95% Modified-t UCL (Johnson-1978)	14.66

Nonparametric Distribution Free UCLs

95% CLT UCL	13.87	95% Jackknife UCL	14.49
95% Standard Bootstrap UCL	13.64	95% Bootstrap-t UCL	17.09
95% Hall's Bootstrap UCL	12.32	95% Percentile Bootstrap UCL	14.05
95% BCA Bootstrap UCL	14.75		
90% Chebyshev(Mean, Sd) UCL	17.77	95% Chebyshev(Mean, Sd) UCL	21.67
97.5% Chebyshev(Mean, Sd) UCL	27.1	99% Chebyshev(Mean, Sd) UCL	37.75

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	21.67

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	23.05
Maximum	66.4	Median	10.2
SD	25.19	Std. Error of Mean	8.397
Coefficient of Variation	1.093	Skewness	0.956
Mean of logged Data	2.498	SD of logged Data	1.244

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.67	95% Adjusted-CLT UCL (Chen-1995)	39.72
		95% Modified-t UCL (Johnson-1978)	39.11

Nonparametric Distribution Free UCLs

95% CLT UCL	36.87	95% Jackknife UCL	38.67
95% Standard Bootstrap UCL	36.05	95% Bootstrap-t UCL	45.03
95% Hall's Bootstrap UCL	33.27	95% Percentile Bootstrap UCL	37.16
95% BCA Bootstrap UCL	38.16		
90% Chebyshev(Mean, Sd) UCL	48.25	95% Chebyshev(Mean, Sd) UCL	59.66
97.5% Chebyshev(Mean, Sd) UCL	75.49	99% Chebyshev(Mean, Sd) UCL	106.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:50:05 AM
From File	21078H_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.9	Mean	15.21
Maximum	16.6	Median	15.9
SD	1.469	Std. Error of Mean	0.49
Coefficient of Variation	0.0966	Skewness	-0.816
Mean of logged Data	2.718	SD of logged Data	0.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.12	95% Adjusted-CLT UCL (Chen-1995)	15.87
		95% Modified-t UCL (Johnson-1978)	16.1

Nonparametric Distribution Free UCLs

95% CLT UCL	16.02	95% Jackknife UCL	16.12
95% Standard Bootstrap UCL	15.96	95% Bootstrap-t UCL	15.96
95% Hall's Bootstrap UCL	15.8	95% Percentile Bootstrap UCL	15.93
95% BCA Bootstrap UCL	15.88		
90% Chebyshev(Mean, Sd) UCL	16.68	95% Chebyshev(Mean, Sd) UCL	17.35
97.5% Chebyshev(Mean, Sd) UCL	18.27	99% Chebyshev(Mean, Sd) UCL	20.08

Suggested UCL to Use

95% Student's-t UCL	16.12	or 95% Modified-t UCL	16.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.8	Mean	69.51
Maximum	212	Median	57.4
SD	65.71	Std. Error of Mean	21.9
Coefficient of Variation	0.945	Skewness	1.417

Mean of logged Data	3.79	SD of logged Data	1.075

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	110.2	95% Adjusted-CLT UCL (Chen-1995)	116.6
		95% Modified-t UCL (Johnson-1978)	112

Nonparametric Distribution Free UCLs

95% CLT UCL	105.5	95% Jackknife UCL	110.2
95% Standard Bootstrap UCL	104.2	95% Bootstrap-t UCL	137.4
95% Hall's Bootstrap UCL	308.3	95% Percentile Bootstrap UCL	105.6
95% BCA Bootstrap UCL	117.4		
90% Chebyshev(Mean, Sd) UCL	135.2	95% Chebyshev(Mean, Sd) UCL	165
97.5% Chebyshev(Mean, Sd) UCL	206.3	99% Chebyshev(Mean, Sd) UCL	287.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	46.5	Mean	50.13
Maximum	53.3	Median	51
SD	2.489	Std. Error of Mean	0.83
Coefficient of Variation	0.0497	Skewness	-0.362
Mean of logged Data	3.914	SD of logged Data	0.0501

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.68	95% Adjusted-CLT UCL (Chen-1995)	51.39
		95% Modified-t UCL (Johnson-1978)	51.66

Nonparametric Distribution Free UCLs

95% CLT UCL	51.5	95% Jackknife UCL	51.68
95% Standard Bootstrap UCL	51.44	95% Bootstrap-t UCL	51.55
95% Hall's Bootstrap UCL	51.28	95% Percentile Bootstrap UCL	51.43
95% BCA Bootstrap UCL	51.3		
90% Chebyshev(Mean, Sd) UCL	52.62	95% Chebyshev(Mean, Sd) UCL	53.75
97.5% Chebyshev(Mean, Sd) UCL	55.32	99% Chebyshev(Mean, Sd) UCL	58.39

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.94	Mean	0.967
Maximum	0.995	Median	0.97
SD	0.019	Std. Error of Mean	0.00635
Coefficient of Variation	0.0197	Skewness	0.0543
Mean of logged Data	-0.0341	SD of logged Data	0.0197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.978	95% Adjusted-CLT UCL (Chen-1995)	0.977
		95% Modified-t UCL (Johnson-1978)	0.978

Nonparametric Distribution Free UCLs

95% CLT UCL	0.977	95% Jackknife UCL	0.978
95% Standard Bootstrap UCL	0.976	95% Bootstrap-t UCL	0.978
95% Hall's Bootstrap UCL	0.978	95% Percentile Bootstrap UCL	0.977
95% BCA Bootstrap UCL	0.976		
90% Chebyshev(Mean, Sd) UCL	0.986	95% Chebyshev(Mean, Sd) UCL	0.994
97.5% Chebyshev(Mean, Sd) UCL	1.006	99% Chebyshev(Mean, Sd) UCL	1.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.5	Mean	0.515
Maximum	0.53	Median	0.515
SD	0.01	Std. Error of Mean	0.00333
Coefficient of Variation	0.0194	Skewness	-0.121
Mean of logged Data	-0.664	SD of logged Data	0.0194

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.521	95% Adjusted-CLT UCL (Chen-1995)	0.52
		95% Modified-t UCL (Johnson-1978)	0.521

Nonparametric Distribution Free UCLs

95% CLT UCL	0.52	95% Jackknife UCL	0.521
95% Standard Bootstrap UCL	0.52	95% Bootstrap-t UCL	0.521
95% Hall's Bootstrap UCL	0.52	95% Percentile Bootstrap UCL	0.521
95% BCA Bootstrap UCL	0.521		
90% Chebyshev(Mean, Sd) UCL	0.525	95% Chebyshev(Mean, Sd) UCL	0.53
97.5% Chebyshev(Mean, Sd) UCL	0.536	99% Chebyshev(Mean, Sd) UCL	0.548

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	2.478
Maximum	3.33	Median	2.16
SD	0.493	Std. Error of Mean	0.164
Coefficient of Variation	0.199	Skewness	0.866
Mean of logged Data	0.891	SD of logged Data	0.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.784	95% Adjusted-CLT UCL (Chen-1995)	2.799
		95% Modified-t UCL (Johnson-1978)	2.792

Nonparametric Distribution Free UCLs

95% CLT UCL	2.749	95% Jackknife UCL	2.784
95% Standard Bootstrap UCL	2.736	95% Bootstrap-t UCL	2.863
95% Hall's Bootstrap UCL	2.814	95% Percentile Bootstrap UCL	2.751
95% BCA Bootstrap UCL	2.791		
90% Chebyshev(Mean, Sd) UCL	2.971	95% Chebyshev(Mean, Sd) UCL	3.194

97.5% Chebyshev(Mean, Sd) UCL	3.504	99% Chebyshev(Mean, Sd) UCL	4.113

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.06	Mean	12.46
Maximum	32.8	Median	5.5
SD	13.14	Std. Error of Mean	4.38
Coefficient of Variation	1.055	Skewness	0.85
Mean of logged Data	1.945	SD of logged Data	1.163

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.6	95% Adjusted-CLT UCL (Chen-1995)	20.99
		95% Modified-t UCL (Johnson-1978)	20.81

Nonparametric Distribution Free UCLs

95% CLT UCL	19.66	95% Jackknife UCL	20.6
95% Standard Bootstrap UCL	19.08	95% Bootstrap-t UCL	22.29
95% Hall's Bootstrap UCL	17.02	95% Percentile Bootstrap UCL	19.06
95% BCA Bootstrap UCL	19.76		
90% Chebyshev(Mean, Sd) UCL	25.6	95% Chebyshev(Mean, Sd) UCL	31.55
97.5% Chebyshev(Mean, Sd) UCL	39.81	99% Chebyshev(Mean, Sd) UCL	56.04

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.06	Mean	18.06
Maximum	46.9	Median	9.01
SD	19.4	Std. Error of Mean	6.466
Coefficient of Variation	1.074	Skewness	0.801
Mean of logged Data	2.217	SD of logged Data	1.315

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.08	95% Adjusted-CLT UCL (Chen-1995)	30.54
		95% Modified-t UCL (Johnson-1978)	30.37

Nonparametric Distribution Free UCLs

95% CLT UCL	28.7	95% Jackknife UCL	30.08
95% Standard Bootstrap UCL	28.21	95% Bootstrap-t UCL	32.15
95% Hall's Bootstrap UCL	24.98	95% Percentile Bootstrap UCL	27.75
95% BCA Bootstrap UCL	30.18		
90% Chebyshev(Mean, Sd) UCL	37.46	95% Chebyshev(Mean, Sd) UCL	46.25
97.5% Chebyshev(Mean, Sd) UCL	58.44	99% Chebyshev(Mean, Sd) UCL	82.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.17	Mean	25.26
Maximum	66.5	Median	12
SD	26.97	Std. Error of Mean	8.99
Coefficient of Variation	1.068	Skewness	0.827
Mean of logged Data	2.582	SD of logged Data	1.273

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.97	95% Adjusted-CLT UCL (Chen-1995)	42.69
		95% Modified-t UCL (Johnson-1978)	42.39

Nonparametric Distribution Free UCLs

95% CLT UCL	40.04	95% Jackknife UCL	41.97
95% Standard Bootstrap UCL	39.21	95% Bootstrap-t UCL	45.88
95% Hall's Bootstrap UCL	35.06	95% Percentile Bootstrap UCL	39.47
95% BCA Bootstrap UCL	40.94		
90% Chebyshev(Mean, Sd) UCL	52.23	95% Chebyshev(Mean, Sd) UCL	64.44
97.5% Chebyshev(Mean, Sd) UCL	81.4	99% Chebyshev(Mean, Sd) UCL	114.7

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.17	Mean	11.77
Maximum	29.8	Median	5.52
SD	11.44	Std. Error of Mean	3.814
Coefficient of Variation	0.972	Skewness	0.888
Mean of logged Data	2.035	SD of logged Data	0.964

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.86	95% Adjusted-CLT UCL (Chen-1995)	19.24
		95% Modified-t UCL (Johnson-1978)	19.04

Nonparametric Distribution Free UCLs

95% CLT UCL	18.04	95% Jackknife UCL	18.86
95% Standard Bootstrap UCL	17.68	95% Bootstrap-t UCL	20.59
95% Hall's Bootstrap UCL	15.56	95% Percentile Bootstrap UCL	17.78
95% BCA Bootstrap UCL	18.54		
90% Chebyshev(Mean, Sd) UCL	23.21	95% Chebyshev(Mean, Sd) UCL	28.39
97.5% Chebyshev(Mean, Sd) UCL	35.58	99% Chebyshev(Mean, Sd) UCL	49.71

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	28.39

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.06	Mean	9.852
Maximum	24.7	Median	4.46
SD	10.01	Std. Error of Mean	3.337
Coefficient of Variation	1.016	Skewness	0.84
Mean of logged Data	1.784	SD of logged Data	1.065

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.06	95% Adjusted-CLT UCL (Chen-1995)	16.34
		95% Modified-t UCL (Johnson-1978)	16.21

Nonparametric Distribution Free UCLs

95% CLT UCL	15.34	95% Jackknife UCL	16.06
95% Standard Bootstrap UCL	15.1	95% Bootstrap-t UCL	17.07
95% Hall's Bootstrap UCL	13.19	95% Percentile Bootstrap UCL	14.72
95% BCA Bootstrap UCL	16.3		
90% Chebyshev(Mean, Sd) UCL	19.86	95% Chebyshev(Mean, Sd) UCL	24.4
97.5% Chebyshev(Mean, Sd) UCL	30.69	99% Chebyshev(Mean, Sd) UCL	43.05

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.06	Mean	15.88
Maximum	40.6	Median	6.79
SD	17.12	Std. Error of Mean	5.706
Coefficient of Variation	1.078	Skewness	0.81
Mean of logged Data	2.114	SD of logged Data	1.266

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.49	95% Adjusted-CLT UCL (Chen-1995)	26.91
		95% Modified-t UCL (Johnson-1978)	26.74

Nonparametric Distribution Free UCLs

95% CLT UCL	25.26	95% Jackknife UCL	26.49
95% Standard Bootstrap UCL	24.75	95% Bootstrap-t UCL	27.76
95% Hall's Bootstrap UCL	21.7	95% Percentile Bootstrap UCL	24.57
95% BCA Bootstrap UCL	26.87		
90% Chebyshev(Mean, Sd) UCL	32.99	95% Chebyshev(Mean, Sd) UCL	40.75
97.5% Chebyshev(Mean, Sd) UCL	51.51	99% Chebyshev(Mean, Sd) UCL	72.65

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	4.498
Maximum	7.36	Median	3.295
SD	1.908	Std. Error of Mean	0.636
Coefficient of Variation	0.424	Skewness	0.897
Mean of logged Data	1.432	SD of logged Data	0.389

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.681	95% Adjusted-CLT UCL (Chen-1995)	5.748
		95% Modified-t UCL (Johnson-1978)	5.713

Nonparametric Distribution Free UCLs

95% CLT UCL	5.544	95% Jackknife UCL	5.681
95% Standard Bootstrap UCL	5.483	95% Bootstrap-t UCL	6.023
95% Hall's Bootstrap UCL	5.116	95% Percentile Bootstrap UCL	5.476
95% BCA Bootstrap UCL	5.763		
90% Chebyshev(Mean, Sd) UCL	6.406	95% Chebyshev(Mean, Sd) UCL	7.271
97.5% Chebyshev(Mean, Sd) UCL	8.47	99% Chebyshev(Mean, Sd) UCL	10.83

Suggested UCL to Use

95% Student's-t UCL	5.681	or 95% Modified-t UCL	5.713

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.06	Mean	23.05
Maximum	63.3	Median	9.28
SD	25.85	Std. Error of Mean	8.618
Coefficient of Variation	1.121	Skewness	0.832
Mean of logged Data	2.361	SD of logged Data	1.431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	39.08	95% Adjusted-CLT UCL (Chen-1995)	39.78
		95% Modified-t UCL (Johnson-1978)	39.48

Nonparametric Distribution Free UCLs

95% CLT UCL	37.23	95% Jackknife UCL	39.08
95% Standard Bootstrap UCL	36.46	95% Bootstrap-t UCL	42.54
95% Hall's Bootstrap UCL	32.33	95% Percentile Bootstrap UCL	35.62
95% BCA Bootstrap UCL	38.71		
90% Chebyshev(Mean, Sd) UCL	48.91	95% Chebyshev(Mean, Sd) UCL	60.62
97.5% Chebyshev(Mean, Sd) UCL	76.87	99% Chebyshev(Mean, Sd) UCL	108.8

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.255	Mean	1.29
Maximum	1.33	Median	1.29
SD	0.0245	Std. Error of Mean	0.00816
Coefficient of Variation	0.019	Skewness	0.271
Mean of logged Data	0.254	SD of logged Data	0.019

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.305	95% Adjusted-CLT UCL (Chen-1995)	1.304
		95% Modified-t UCL (Johnson-1978)	1.305

Nonparametric Distribution Free UCLs

95% CLT UCL	1.303	95% Jackknife UCL	1.305
95% Standard Bootstrap UCL	1.302	95% Bootstrap-t UCL	1.306
95% Hall's Bootstrap UCL	1.308	95% Percentile Bootstrap UCL	1.303
95% BCA Bootstrap UCL	1.304		
90% Chebyshev(Mean, Sd) UCL	1.314	95% Chebyshev(Mean, Sd) UCL	1.326
97.5% Chebyshev(Mean, Sd) UCL	1.341	99% Chebyshev(Mean, Sd) UCL	1.371

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.17	Mean	14.13
Maximum	36	Median	6.6
SD	14.1	Std. Error of Mean	4.699
Coefficient of Variation	0.997	Skewness	0.872
Mean of logged Data	2.174	SD of logged Data	1.029

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.87	95% Adjusted-CLT UCL (Chen-1995)	23.32
		95% Modified-t UCL (Johnson-1978)	23.1

Nonparametric Distribution Free UCLs

95% CLT UCL	21.86	95% Jackknife UCL	22.87
95% Standard Bootstrap UCL	21.48	95% Bootstrap-t UCL	25.01
95% Hall's Bootstrap UCL	19.05	95% Percentile Bootstrap UCL	21.51
95% BCA Bootstrap UCL	23.08		
90% Chebyshev(Mean, Sd) UCL	28.23	95% Chebyshev(Mean, Sd) UCL	34.62
97.5% Chebyshev(Mean, Sd) UCL	43.48	99% Chebyshev(Mean, Sd) UCL	60.89

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.94	Mean	0.967
Maximum	0.995	Median	0.97
SD	0.019	Std. Error of Mean	0.00635
Coefficient of Variation	0.0197	Skewness	0.0543
Mean of logged Data	-0.0341	SD of logged Data	0.0197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.978	95% Adjusted-CLT UCL (Chen-1995)	0.977
		95% Modified-t UCL (Johnson-1978)	0.978

Nonparametric Distribution Free UCLs

95% CLT UCL	0.977	95% Jackknife UCL	0.978
95% Standard Bootstrap UCL	0.976	95% Bootstrap-t UCL	0.979
95% Hall's Bootstrap UCL	0.978	95% Percentile Bootstrap UCL	0.977
95% BCA Bootstrap UCL	0.977		
90% Chebyshev(Mean, Sd) UCL	0.986	95% Chebyshev(Mean, Sd) UCL	0.994
97.5% Chebyshev(Mean, Sd) UCL	1.006	99% Chebyshev(Mean, Sd) UCL	1.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.85	Mean	8.366
Maximum	20.8	Median	3.295
SD	7.699	Std. Error of Mean	2.566
Coefficient of Variation	0.92	Skewness	0.922
Mean of logged Data	1.761	SD of logged Data	0.871

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.14	95% Adjusted-CLT UCL (Chen-1995)	13.43
		95% Modified-t UCL (Johnson-1978)	13.27

Nonparametric Distribution Free UCLs

95% CLT UCL	12.59	95% Jackknife UCL	13.14
95% Standard Bootstrap UCL	12.38	95% Bootstrap-t UCL	14.45
95% Hall's Bootstrap UCL	10.87	95% Percentile Bootstrap UCL	12.54
95% BCA Bootstrap UCL	13.58		
90% Chebyshev(Mean, Sd) UCL	16.07	95% Chebyshev(Mean, Sd) UCL	19.55
97.5% Chebyshev(Mean, Sd) UCL	24.39	99% Chebyshev(Mean, Sd) UCL	33.9

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.55

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.17	Mean	23.64
Maximum	61.8	Median	9.38
SD	25.57	Std. Error of Mean	8.522
Coefficient of Variation	1.082	Skewness	0.821
Mean of logged Data	2.516	SD of logged Data	1.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.49	95% Adjusted-CLT UCL (Chen-1995)	40.15
		95% Modified-t UCL (Johnson-1978)	39.88

Nonparametric Distribution Free UCLs

95% CLT UCL	37.66	95% Jackknife UCL	39.49
95% Standard Bootstrap UCL	36.74	95% Bootstrap-t UCL	41.85
95% Hall's Bootstrap UCL	32.43	95% Percentile Bootstrap UCL	36.65
95% BCA Bootstrap UCL	39.56		
90% Chebyshev(Mean, Sd) UCL	49.21	95% Chebyshev(Mean, Sd) UCL	60.79
97.5% Chebyshev(Mean, Sd) UCL	76.86	99% Chebyshev(Mean, Sd) UCL	108.4

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:51:23 AM
From File	21078I_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.95	Mean	15.45
Maximum	16.8	Median	15.7
SD	1.411	Std. Error of Mean	0.47
Coefficient of Variation	0.0913	Skewness	-2.235
Mean of logged Data	2.733	SD of logged Data	0.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.32	95% Adjusted-CLT UCL (Chen-1995)	15.85
		95% Modified-t UCL (Johnson-1978)	16.27

Nonparametric Distribution Free UCLs

95% CLT UCL	16.22	95% Jackknife UCL	16.32
95% Standard Bootstrap UCL	16.18	95% Bootstrap-t UCL	16.08
95% Hall's Bootstrap UCL	15.95	95% Percentile Bootstrap UCL	16.07
95% BCA Bootstrap UCL	15.99		
90% Chebyshev(Mean, Sd) UCL	16.86	95% Chebyshev(Mean, Sd) UCL	17.5
97.5% Chebyshev(Mean, Sd) UCL	18.39	99% Chebyshev(Mean, Sd) UCL	20.13

Suggested UCL to Use

95% Student's-t UCL	16.32	or 95% Modified-t UCL	16.27

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	16.9	Mean	51.21
Maximum	164	Median	29.7
SD	47.29	Std. Error of Mean	15.76
Coefficient of Variation	0.923	Skewness	2.003

Mean of logged Data	3.642	SD of logged Data	0.773

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	80.52	95% Adjusted-CLT UCL (Chen-1995)	88.39
		95% Modified-t UCL (Johnson-1978)	82.28

Nonparametric Distribution Free UCLs

95% CLT UCL	77.14	95% Jackknife UCL	80.52
95% Standard Bootstrap UCL	76.41	95% Bootstrap-t UCL	111.8
95% Hall's Bootstrap UCL	165	95% Percentile Bootstrap UCL	77.81
95% BCA Bootstrap UCL	86.04		
90% Chebyshev(Mean, Sd) UCL	98.5	95% Chebyshev(Mean, Sd) UCL	119.9
97.5% Chebyshev(Mean, Sd) UCL	149.7	99% Chebyshev(Mean, Sd) UCL	208.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	51	Mean	56.4
Maximum	65.8	Median	56.1
SD	4.361	Std. Error of Mean	1.454
Coefficient of Variation	0.0773	Skewness	1.171
Mean of logged Data	4.03	SD of logged Data	0.0751

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.1	95% Adjusted-CLT UCL (Chen-1995)	59.4
		95% Modified-t UCL (Johnson-1978)	59.2

Nonparametric Distribution Free UCLs

95% CLT UCL	58.79	95% Jackknife UCL	59.1
95% Standard Bootstrap UCL	58.6	95% Bootstrap-t UCL	59.82
95% Hall's Bootstrap UCL	61.92	95% Percentile Bootstrap UCL	58.81
95% BCA Bootstrap UCL	59.2		
90% Chebyshev(Mean, Sd) UCL	60.76	95% Chebyshev(Mean, Sd) UCL	62.74
97.5% Chebyshev(Mean, Sd) UCL	65.48	99% Chebyshev(Mean, Sd) UCL	70.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.643	Mean	0.887
Maximum	0.99	Median	0.96
SD	0.118	Std. Error of Mean	0.0394
Coefficient of Variation	0.133	Skewness	-1.248
Mean of logged Data	-0.129	SD of logged Data	0.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.96	95% Adjusted-CLT UCL (Chen-1995)	0.934
		95% Modified-t UCL (Johnson-1978)	0.957

Nonparametric Distribution Free UCLs

95% CLT UCL	0.952	95% Jackknife UCL	0.96
95% Standard Bootstrap UCL	0.947	95% Bootstrap-t UCL	0.945
95% Hall's Bootstrap UCL	0.936	95% Percentile Bootstrap UCL	0.944
95% BCA Bootstrap UCL	0.936		
90% Chebyshev(Mean, Sd) UCL	1.005	95% Chebyshev(Mean, Sd) UCL	1.059
97.5% Chebyshev(Mean, Sd) UCL	1.133	99% Chebyshev(Mean, Sd) UCL	1.279

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.382	Mean	0.517
Maximum	0.605	Median	0.515
SD	0.0611	Std. Error of Mean	0.0204
Coefficient of Variation	0.118	Skewness	-1.103
Mean of logged Data	-0.667	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.555	95% Adjusted-CLT UCL (Chen-1995)	0.542
		95% Modified-t UCL (Johnson-1978)	0.553

Nonparametric Distribution Free UCLs

95% CLT UCL	0.55	95% Jackknife UCL	0.555
95% Standard Bootstrap UCL	0.548	95% Bootstrap-t UCL	0.547
95% Hall's Bootstrap UCL	0.55	95% Percentile Bootstrap UCL	0.547
95% BCA Bootstrap UCL	0.544		
90% Chebyshev(Mean, Sd) UCL	0.578	95% Chebyshev(Mean, Sd) UCL	0.606
97.5% Chebyshev(Mean, Sd) UCL	0.644	99% Chebyshev(Mean, Sd) UCL	0.72

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.44	Mean	1.902
Maximum	2.145	Median	2.08
SD	0.294	Std. Error of Mean	0.098
Coefficient of Variation	0.155	Skewness	-0.944
Mean of logged Data	0.631	SD of logged Data	0.166

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.084	95% Adjusted-CLT UCL (Chen-1995)	2.03
		95% Modified-t UCL (Johnson-1978)	2.079

Nonparametric Distribution Free UCLs

95% CLT UCL	2.063	95% Jackknife UCL	2.084
95% Standard Bootstrap UCL	2.058	95% Bootstrap-t UCL	2.046
95% Hall's Bootstrap UCL	2.019	95% Percentile Bootstrap UCL	2.041
95% BCA Bootstrap UCL	2.039		
90% Chebyshev(Mean, Sd) UCL	2.196	95% Chebyshev(Mean, Sd) UCL	2.329

97.5% Chebyshev(Mean, Sd) UCL	2.514	99% Chebyshev(Mean, Sd) UCL	2.877

Suggested UCL to Use

95% Student's-t UCL	2.084	or 95% Modified-t UCL	2.079

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	7.003
Maximum	13.2	Median	5.12
SD	4.57	Std. Error of Mean	1.523
Coefficient of Variation	0.653	Skewness	0.465
Mean of logged Data	1.728	SD of logged Data	0.731

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.836	95% Adjusted-CLT UCL (Chen-1995)	9.762
		95% Modified-t UCL (Johnson-1978)	9.876

Nonparametric Distribution Free UCLs

95% CLT UCL	9.509	95% Jackknife UCL	9.836
95% Standard Bootstrap UCL	9.309	95% Bootstrap-t UCL	10.04
95% Hall's Bootstrap UCL	9.017	95% Percentile Bootstrap UCL	9.593
95% BCA Bootstrap UCL	9.672		
90% Chebyshev(Mean, Sd) UCL	11.57	95% Chebyshev(Mean, Sd) UCL	13.64
97.5% Chebyshev(Mean, Sd) UCL	16.52	99% Chebyshev(Mean, Sd) UCL	22.16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	9.931
Maximum	21	Median	7.8
SD	7.749	Std. Error of Mean	2.583

Coefficient of Variation	0.78	Skewness	0.571
Mean of logged Data	1.963	SD of logged Data	0.917

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.73	95% Adjusted-CLT UCL (Chen-1995)	14.71
		95% Modified-t UCL (Johnson-1978)	14.82

Nonparametric Distribution Free UCLs

95% CLT UCL	14.18	95% Jackknife UCL	14.73
95% Standard Bootstrap UCL	13.93	95% Bootstrap-t UCL	15.48
95% Hall's Bootstrap UCL	13.26	95% Percentile Bootstrap UCL	14.33
95% BCA Bootstrap UCL	14.26		
90% Chebyshev(Mean, Sd) UCL	17.68	95% Chebyshev(Mean, Sd) UCL	21.19
97.5% Chebyshev(Mean, Sd) UCL	26.06	99% Chebyshev(Mean, Sd) UCL	35.63

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.115	Mean	12.9
Maximum	25.9	Median	10.2
SD	9.488	Std. Error of Mean	3.163
Coefficient of Variation	0.736	Skewness	0.488
Mean of logged Data	2.263	SD of logged Data	0.857

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.78	95% Adjusted-CLT UCL (Chen-1995)	18.65
		95% Modified-t UCL (Johnson-1978)	18.86

Nonparametric Distribution Free UCLs

95% CLT UCL	18.1	95% Jackknife UCL	18.78
95% Standard Bootstrap UCL	17.97	95% Bootstrap-t UCL	19.39
95% Hall's Bootstrap UCL	16.96	95% Percentile Bootstrap UCL	18.01
95% BCA Bootstrap UCL	17.79		
90% Chebyshev(Mean, Sd) UCL	22.38	95% Chebyshev(Mean, Sd) UCL	26.68
97.5% Chebyshev(Mean, Sd) UCL	32.65	99% Chebyshev(Mean, Sd) UCL	44.36

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.115	Mean	7.23
Maximum	13.3	Median	5.34
SD	4.345	Std. Error of Mean	1.448
Coefficient of Variation	0.601	Skewness	0.588
Mean of logged Data	1.813	SD of logged Data	0.61

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.923	95% Adjusted-CLT UCL (Chen-1995)	9.916
		95% Modified-t UCL (Johnson-1978)	9.971

Nonparametric Distribution Free UCLs

95% CLT UCL	9.612	95% Jackknife UCL	9.923
95% Standard Bootstrap UCL	9.494	95% Bootstrap-t UCL	10.59
95% Hall's Bootstrap UCL	9.294	95% Percentile Bootstrap UCL	9.599
95% BCA Bootstrap UCL	9.724		
90% Chebyshev(Mean, Sd) UCL	11.58	95% Chebyshev(Mean, Sd) UCL	13.54
97.5% Chebyshev(Mean, Sd) UCL	16.28	99% Chebyshev(Mean, Sd) UCL	21.64

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	6.067
Maximum	11	Median	4.33
SD	3.632	Std. Error of Mean	1.211
Coefficient of Variation	0.599	Skewness	0.348
Mean of logged Data	1.62	SD of logged Data	0.665

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.318	95% Adjusted-CLT UCL (Chen-1995)	8.208
		95% Modified-t UCL (Johnson-1978)	8.341

Nonparametric Distribution Free UCLs

95% CLT UCL	8.058	95% Jackknife UCL	8.318
95% Standard Bootstrap UCL	7.935	95% Bootstrap-t UCL	8.639
95% Hall's Bootstrap UCL	7.693	95% Percentile Bootstrap UCL	7.981
95% BCA Bootstrap UCL	8.127		
90% Chebyshev(Mean, Sd) UCL	9.698	95% Chebyshev(Mean, Sd) UCL	11.34
97.5% Chebyshev(Mean, Sd) UCL	13.63	99% Chebyshev(Mean, Sd) UCL	18.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.025	Mean	9.906
Maximum	19.8	Median	7.68
SD	7.388	Std. Error of Mean	2.463
Coefficient of Variation	0.746	Skewness	0.487
Mean of logged Data	1.981	SD of logged Data	0.895

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.49	95% Adjusted-CLT UCL (Chen-1995)	14.38
		95% Modified-t UCL (Johnson-1978)	14.55

Nonparametric Distribution Free UCLs

95% CLT UCL	13.96	95% Jackknife UCL	14.49
95% Standard Bootstrap UCL	13.59	95% Bootstrap-t UCL	15.08
95% Hall's Bootstrap UCL	13.18	95% Percentile Bootstrap UCL	13.68
95% BCA Bootstrap UCL	13.9		
90% Chebyshev(Mean, Sd) UCL	17.29	95% Chebyshev(Mean, Sd) UCL	20.64
97.5% Chebyshev(Mean, Sd) UCL	25.29	99% Chebyshev(Mean, Sd) UCL	34.41

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.115	Mean	3.836
Maximum	5.68	Median	3.76
SD	0.81	Std. Error of Mean	0.27
Coefficient of Variation	0.211	Skewness	1.593
Mean of logged Data	1.327	SD of logged Data	0.193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.338	95% Adjusted-CLT UCL (Chen-1995)	4.433
		95% Modified-t UCL (Johnson-1978)	4.362

Nonparametric Distribution Free UCLs

95% CLT UCL	4.28	95% Jackknife UCL	4.338
95% Standard Bootstrap UCL	4.26	95% Bootstrap-t UCL	4.597
95% Hall's Bootstrap UCL	5.918	95% Percentile Bootstrap UCL	4.291
95% BCA Bootstrap UCL	4.388		
90% Chebyshev(Mean, Sd) UCL	4.646	95% Chebyshev(Mean, Sd) UCL	5.013
97.5% Chebyshev(Mean, Sd) UCL	5.522	99% Chebyshev(Mean, Sd) UCL	6.522

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	12.68
Maximum	28.6	Median	8.29
SD	11.32	Std. Error of Mean	3.773
Coefficient of Variation	0.892	Skewness	0.657
Mean of logged Data	2.081	SD of logged Data	1.091

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.7	95% Adjusted-CLT UCL (Chen-1995)	19.77
		95% Modified-t UCL (Johnson-1978)	19.84

Nonparametric Distribution Free UCLs

95% CLT UCL	18.89	95% Jackknife UCL	19.7
95% Standard Bootstrap UCL	18.63	95% Bootstrap-t UCL	20.88
95% Hall's Bootstrap UCL	17.08	95% Percentile Bootstrap UCL	18.62
95% BCA Bootstrap UCL	19.52		
90% Chebyshev(Mean, Sd) UCL	24	95% Chebyshev(Mean, Sd) UCL	29.13
97.5% Chebyshev(Mean, Sd) UCL	36.25	99% Chebyshev(Mean, Sd) UCL	50.23

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.24	Mean	1.283
Maximum	1.32	Median	1.29
SD	0.0256	Std. Error of Mean	0.00854
Coefficient of Variation	0.02	Skewness	-0.778
Mean of logged Data	0.249	SD of logged Data	0.0201

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.299	95% Adjusted-CLT UCL (Chen-1995)	1.295
		95% Modified-t UCL (Johnson-1978)	1.299

Nonparametric Distribution Free UCLs

95% CLT UCL	1.297	95% Jackknife UCL	1.299
95% Standard Bootstrap UCL	1.297	95% Bootstrap-t UCL	1.297
95% Hall's Bootstrap UCL	1.296	95% Percentile Bootstrap UCL	1.296
95% BCA Bootstrap UCL	1.294		
90% Chebyshev(Mean, Sd) UCL	1.309	95% Chebyshev(Mean, Sd) UCL	1.321
97.5% Chebyshev(Mean, Sd) UCL	1.337	99% Chebyshev(Mean, Sd) UCL	1.368

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.115	Mean	8.716
Maximum	15.6	Median	7.5
SD	5.057	Std. Error of Mean	1.686
Coefficient of Variation	0.58	Skewness	0.358
Mean of logged Data	1.996	SD of logged Data	0.637

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.85	95% Adjusted-CLT UCL (Chen-1995)	11.7
		95% Modified-t UCL (Johnson-1978)	11.88

Nonparametric Distribution Free UCLs

95% CLT UCL	11.49	95% Jackknife UCL	11.85
95% Standard Bootstrap UCL	11.35	95% Bootstrap-t UCL	12.09
95% Hall's Bootstrap UCL	11	95% Percentile Bootstrap UCL	11.34
95% BCA Bootstrap UCL	11.7		
90% Chebyshev(Mean, Sd) UCL	13.77	95% Chebyshev(Mean, Sd) UCL	16.06
97.5% Chebyshev(Mean, Sd) UCL	19.24	99% Chebyshev(Mean, Sd) UCL	25.49

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.696	Mean	1.058
Maximum	1.65	Median	0.975
SD	0.367	Std. Error of Mean	0.122
Coefficient of Variation	0.347	Skewness	0.609
Mean of logged Data	0.00502	SD of logged Data	0.339

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.286	95% Adjusted-CLT UCL (Chen-1995)	1.286
		95% Modified-t UCL (Johnson-1978)	1.29

Nonparametric Distribution Free UCLs

95% CLT UCL	1.26	95% Jackknife UCL	1.286
95% Standard Bootstrap UCL	1.245	95% Bootstrap-t UCL	1.345
95% Hall's Bootstrap UCL	1.236	95% Percentile Bootstrap UCL	1.251
95% BCA Bootstrap UCL	1.251		
90% Chebyshev(Mean, Sd) UCL	1.425	95% Chebyshev(Mean, Sd) UCL	1.592
97.5% Chebyshev(Mean, Sd) UCL	1.822	99% Chebyshev(Mean, Sd) UCL	2.275

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.115	Mean	5.651
Maximum	11.2	Median	3.41
SD	3.489	Std. Error of Mean	1.163
Coefficient of Variation	0.617	Skewness	0.932
Mean of logged Data	1.58	SD of logged Data	0.562

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.814	95% Adjusted-CLT UCL (Chen-1995)	7.95
		95% Modified-t UCL (Johnson-1978)	7.874

Nonparametric Distribution Free UCLs

95% CLT UCL	7.564	95% Jackknife UCL	7.814
95% Standard Bootstrap UCL	7.462	95% Bootstrap-t UCL	8.598
95% Hall's Bootstrap UCL	6.825	95% Percentile Bootstrap UCL	7.477
95% BCA Bootstrap UCL	7.786		
90% Chebyshev(Mean, Sd) UCL	9.14	95% Chebyshev(Mean, Sd) UCL	10.72
97.5% Chebyshev(Mean, Sd) UCL	12.91	99% Chebyshev(Mean, Sd) UCL	17.22

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.72

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.38	Mean	12.68
Maximum	28	Median	7.83
SD	10.94	Std. Error of Mean	3.647
Coefficient of Variation	0.863	Skewness	0.708
Mean of logged Data	2.152	SD of logged Data	0.971

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.46	95% Adjusted-CLT UCL (Chen-1995)	19.6
		95% Modified-t UCL (Johnson-1978)	19.6

Nonparametric Distribution Free UCLs

95% CLT UCL	18.68	95% Jackknife UCL	19.46
95% Standard Bootstrap UCL	18.38	95% Bootstrap-t UCL	20.6
95% Hall's Bootstrap UCL	17.05	95% Percentile Bootstrap UCL	18.51
95% BCA Bootstrap UCL	18.28		
90% Chebyshev(Mean, Sd) UCL	23.62	95% Chebyshev(Mean, Sd) UCL	28.58
97.5% Chebyshev(Mean, Sd) UCL	35.46	99% Chebyshev(Mean, Sd) UCL	48.97

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:52:43 AM
From File	21078J_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	14.4	Mean	15.49
Maximum	17.1	Median	15.2
SD	0.993	Std. Error of Mean	0.331
Coefficient of Variation	0.0641	Skewness	0.459
Mean of logged Data	2.738	SD of logged Data	0.0635

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.1	95% Adjusted-CLT UCL (Chen-1995)	16.09
		95% Modified-t UCL (Johnson-1978)	16.11

Nonparametric Distribution Free UCLs

95% CLT UCL	16.03	95% Jackknife UCL	16.1
95% Standard Bootstrap UCL	16	95% Bootstrap-t UCL	16.22
95% Hall's Bootstrap UCL	15.95	95% Percentile Bootstrap UCL	16
95% BCA Bootstrap UCL	16.03		
90% Chebyshev(Mean, Sd) UCL	16.48	95% Chebyshev(Mean, Sd) UCL	16.93
97.5% Chebyshev(Mean, Sd) UCL	17.56	99% Chebyshev(Mean, Sd) UCL	18.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	14.4	Mean	67.53
Maximum	203	Median	51.6
SD	63.22	Std. Error of Mean	21.07
Coefficient of Variation	0.936	Skewness	1.404
Mean of logged Data	3.815	SD of logged Data	0.966

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	106.7	95% Adjusted-CLT UCL (Chen-1995)	112.7
		95% Modified-t UCL (Johnson-1978)	108.4

Nonparametric Distribution Free UCLs

95% CLT UCL	102.2	95% Jackknife UCL	106.7
95% Standard Bootstrap UCL	100.9	95% Bootstrap-t UCL	129.5
95% Hall's Bootstrap UCL	147.3	95% Percentile Bootstrap UCL	102.2
95% BCA Bootstrap UCL	113		
90% Chebyshev(Mean, Sd) UCL	130.8	95% Chebyshev(Mean, Sd) UCL	159.4
97.5% Chebyshev(Mean, Sd) UCL	199.1	99% Chebyshev(Mean, Sd) UCL	277.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	50.6	Mean	54.27
Maximum	57.6	Median	54.4
SD	2.084	Std. Error of Mean	0.695
Coefficient of Variation	0.0384	Skewness	-0.175
Mean of logged Data	3.993	SD of logged Data	0.0386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.56	95% Adjusted-CLT UCL (Chen-1995)	55.37
		95% Modified-t UCL (Johnson-1978)	55.55

Nonparametric Distribution Free UCLs

95% CLT UCL	55.41	95% Jackknife UCL	55.56
95% Standard Bootstrap UCL	55.37	95% Bootstrap-t UCL	55.6
95% Hall's Bootstrap UCL	55.45	95% Percentile Bootstrap UCL	55.36
95% BCA Bootstrap UCL	55.33		
90% Chebyshev(Mean, Sd) UCL	56.35	95% Chebyshev(Mean, Sd) UCL	57.3
97.5% Chebyshev(Mean, Sd) UCL	58.61	99% Chebyshev(Mean, Sd) UCL	61.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.605	Mean	4.749
Maximum	35.7	Median	0.926
SD	11.61	Std. Error of Mean	3.869
Coefficient of Variation	2.444	Skewness	2.999
Mean of logged Data	0.273	SD of logged Data	1.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.94	95% Adjusted-CLT UCL (Chen-1995)	15.25
		95% Modified-t UCL (Johnson-1978)	12.59

Nonparametric Distribution Free UCLs

95% CLT UCL	11.11	95% Jackknife UCL	11.94
95% Standard Bootstrap UCL	10.81	95% Bootstrap-t UCL	650.6
95% Hall's Bootstrap UCL	366.4	95% Percentile Bootstrap UCL	12.47
95% BCA Bootstrap UCL	16.34		
90% Chebyshev(Mean, Sd) UCL	16.36	95% Chebyshev(Mean, Sd) UCL	21.61
97.5% Chebyshev(Mean, Sd) UCL	28.91	99% Chebyshev(Mean, Sd) UCL	43.25

Suggested UCL to Use

95% Hall's Bootstrap UCL	366.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.475	Mean	5.182
Maximum	41.6	Median	0.525
SD	13.66	Std. Error of Mean	4.553
Coefficient of Variation	2.635	Skewness	2.999

Mean of logged Data	-0.0238	SD of logged Data	1.428

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.65	95% Adjusted-CLT UCL (Chen-1995)	17.53
		95% Modified-t UCL (Johnson-1978)	14.41

Nonparametric Distribution Free UCLs

95% CLT UCL	12.67	95% Jackknife UCL	13.65
95% Standard Bootstrap UCL	12.33	95% Bootstrap-t UCL	482.2
95% Hall's Bootstrap UCL	372.9	95% Percentile Bootstrap UCL	14.27
95% BCA Bootstrap UCL	18.84		
90% Chebyshev(Mean, Sd) UCL	18.84	95% Chebyshev(Mean, Sd) UCL	25.03
97.5% Chebyshev(Mean, Sd) UCL	33.61	99% Chebyshev(Mean, Sd) UCL	50.48

Suggested UCL to Use

95% Hall's Bootstrap UCL	372.9

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.76	Mean	6.761
Maximum	43.3	Median	2.13
SD	13.71	Std. Error of Mean	4.568
Coefficient of Variation	2.027	Skewness	2.997
Mean of logged Data	1.109	SD of logged Data	1.006

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.26	95% Adjusted-CLT UCL (Chen-1995)	19.15
		95% Modified-t UCL (Johnson-1978)	16.02

Nonparametric Distribution Free UCLs

95% CLT UCL	14.28	95% Jackknife UCL	15.26
95% Standard Bootstrap UCL	13.57	95% Bootstrap-t UCL	288.4
95% Hall's Bootstrap UCL	153	95% Percentile Bootstrap UCL	15.83

95% BCA Bootstrap UCL	20.39		
90% Chebyshev(Mean, Sd) UCL	20.47	95% Chebyshev(Mean, Sd) UCL	26.67
97.5% Chebyshev(Mean, Sd) UCL	35.29	99% Chebyshev(Mean, Sd) UCL	52.22

Suggested UCL to Use

95% Hall's Bootstrap UCL 153

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.125	Mean	15.85
Maximum	51.7	Median	8.97
SD	16.09	Std. Error of Mean	5.364
Coefficient of Variation	1.015	Skewness	1.512
Mean of logged Data	2.249	SD of logged Data	1.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.83	95% Adjusted-CLT UCL (Chen-1995)	27.56
		95% Modified-t UCL (Johnson-1978)	26.28

Nonparametric Distribution Free UCLs

95% CLT UCL	24.67	95% Jackknife UCL	25.83
95% Standard Bootstrap UCL	24.12	95% Bootstrap-t UCL	31.47
95% Hall's Bootstrap UCL	33.32	95% Percentile Bootstrap UCL	24.49
95% BCA Bootstrap UCL	27.08		
90% Chebyshev(Mean, Sd) UCL	31.94	95% Chebyshev(Mean, Sd) UCL	39.23
97.5% Chebyshev(Mean, Sd) UCL	49.35	99% Chebyshev(Mean, Sd) UCL	69.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.125	Mean	18.92
Maximum	48.1	Median	9.33
SD	16.81	Std. Error of Mean	5.604
Coefficient of Variation	0.889	Skewness	0.594
Mean of logged Data	2.43	SD of logged Data	1.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.34	95% Adjusted-CLT UCL (Chen-1995)	29.32
		95% Modified-t UCL (Johnson-1978)	29.52

Nonparametric Distribution Free UCLs

95% CLT UCL	28.14	95% Jackknife UCL	29.34
95% Standard Bootstrap UCL	27.85	95% Bootstrap-t UCL	31.09
95% Hall's Bootstrap UCL	27	95% Percentile Bootstrap UCL	27.32
95% BCA Bootstrap UCL	28.7		
90% Chebyshev(Mean, Sd) UCL	35.73	95% Chebyshev(Mean, Sd) UCL	43.35
97.5% Chebyshev(Mean, Sd) UCL	53.91	99% Chebyshev(Mean, Sd) UCL	74.68

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.265	Mean	19.06
Maximum	46.1	Median	11.8
SD	16.81	Std. Error of Mean	5.603
Coefficient of Variation	0.882	Skewness	0.78
Mean of logged Data	2.54	SD of logged Data	1.007

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.48	95% Adjusted-CLT UCL (Chen-1995)	29.84
		95% Modified-t UCL (Johnson-1978)	29.73

Nonparametric Distribution Free UCLs

95% CLT UCL	28.28	95% Jackknife UCL	29.48
95% Standard Bootstrap UCL	27.67	95% Bootstrap-t UCL	31.48
95% Hall's Bootstrap UCL	25.93	95% Percentile Bootstrap UCL	27.5

95% BCA Bootstrap UCL	30.03		
90% Chebyshev(Mean, Sd) UCL	35.87	95% Chebyshev(Mean, Sd) UCL	43.49
97.5% Chebyshev(Mean, Sd) UCL	54.06	99% Chebyshev(Mean, Sd) UCL	74.82

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.265	Mean	10.49
Maximum	24.4	Median	6.15
SD	8.649	Std. Error of Mean	2.883
Coefficient of Variation	0.825	Skewness	0.852
Mean of logged Data	2.047	SD of logged Data	0.818

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.85	95% Adjusted-CLT UCL (Chen-1995)	16.1
		95% Modified-t UCL (Johnson-1978)	15.98

Nonparametric Distribution Free UCLs

95% CLT UCL	15.23	95% Jackknife UCL	15.85
95% Standard Bootstrap UCL	14.85	95% Bootstrap-t UCL	17.08
95% Hall's Bootstrap UCL	13.68	95% Percentile Bootstrap UCL	14.88
95% BCA Bootstrap UCL	16.12		
90% Chebyshev(Mean, Sd) UCL	19.14	95% Chebyshev(Mean, Sd) UCL	23.05
97.5% Chebyshev(Mean, Sd) UCL	28.49	99% Chebyshev(Mean, Sd) UCL	39.17

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.125	Mean	8.443
Maximum	19.7	Median	5.14
SD	7.1	Std. Error of Mean	2.367
Coefficient of Variation	0.841	Skewness	0.809

Mean of logged Data	1.8	SD of logged Data	0.875

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.84	95% Adjusted-CLT UCL (Chen-1995)	13.02
		95% Modified-t UCL (Johnson-1978)	12.95

Nonparametric Distribution Free UCLs

95% CLT UCL	12.34	95% Jackknife UCL	12.84
95% Standard Bootstrap UCL	12.1	95% Bootstrap-t UCL	13.77
95% Hall's Bootstrap UCL	11.2	95% Percentile Bootstrap UCL	12.5
95% BCA Bootstrap UCL	12.04		
90% Chebyshev(Mean, Sd) UCL	15.54	95% Chebyshev(Mean, Sd) UCL	18.76
97.5% Chebyshev(Mean, Sd) UCL	23.22	99% Chebyshev(Mean, Sd) UCL	31.99

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.125	Mean	19.78
Maximum	54.4	Median	9.85
SD	18.35	Std. Error of Mean	6.116
Coefficient of Variation	0.928	Skewness	0.81
Mean of logged Data	2.448	SD of logged Data	1.217

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.15	95% Adjusted-CLT UCL (Chen-1995)	31.6
		95% Modified-t UCL (Johnson-1978)	31.42

Nonparametric Distribution Free UCLs

95% CLT UCL	29.84	95% Jackknife UCL	31.15
95% Standard Bootstrap UCL	29.26	95% Bootstrap-t UCL	34.35
95% Hall's Bootstrap UCL	29.84	95% Percentile Bootstrap UCL	29.65
95% BCA Bootstrap UCL	31.4		
90% Chebyshev(Mean, Sd) UCL	38.12	95% Chebyshev(Mean, Sd) UCL	46.43
97.5% Chebyshev(Mean, Sd) UCL	57.97	99% Chebyshev(Mean, Sd) UCL	80.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.64	Mean	4.116
Maximum	6.87	Median	3.275
SD	1.486	Std. Error of Mean	0.495
Coefficient of Variation	0.361	Skewness	1.001
Mean of logged Data	1.362	SD of logged Data	0.335

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.037	95% Adjusted-CLT UCL (Chen-1995)	5.107
		95% Modified-t UCL (Johnson-1978)	5.065

Nonparametric Distribution Free UCLs

95% CLT UCL	4.931	95% Jackknife UCL	5.037
95% Standard Bootstrap UCL	4.883	95% Bootstrap-t UCL	5.367
95% Hall's Bootstrap UCL	4.799	95% Percentile Bootstrap UCL	4.947
95% BCA Bootstrap UCL	5.027		
90% Chebyshev(Mean, Sd) UCL	5.602	95% Chebyshev(Mean, Sd) UCL	6.275
97.5% Chebyshev(Mean, Sd) UCL	7.209	99% Chebyshev(Mean, Sd) UCL	9.044

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.125	Mean	25.54
Maximum	50.5	Median	20.5
SD	20.43	Std. Error of Mean	6.81
Coefficient of Variation	0.8	Skewness	0.096
Mean of logged Data	2.715	SD of logged Data	1.289

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.2	95% Adjusted-CLT UCL (Chen-1995)	36.97
		95% Modified-t UCL (Johnson-1978)	38.24

Nonparametric Distribution Free UCLs

95% CLT UCL	36.74	95% Jackknife UCL	38.2
95% Standard Bootstrap UCL	36.22	95% Bootstrap-t UCL	38.34
95% Hall's Bootstrap UCL	34.18	95% Percentile Bootstrap UCL	36.22
95% BCA Bootstrap UCL	37.01		
90% Chebyshev(Mean, Sd) UCL	45.97	95% Chebyshev(Mean, Sd) UCL	55.22
97.5% Chebyshev(Mean, Sd) UCL	68.07	99% Chebyshev(Mean, Sd) UCL	93.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.19	Mean	1.265
Maximum	1.31	Median	1.275
SD	0.0448	Std. Error of Mean	0.0149
Coefficient of Variation	0.0354	Skewness	-0.683
Mean of logged Data	0.235	SD of logged Data	0.0358

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.293	95% Adjusted-CLT UCL (Chen-1995)	1.286
		95% Modified-t UCL (Johnson-1978)	1.292

Nonparametric Distribution Free UCLs

95% CLT UCL	1.29	95% Jackknife UCL	1.293
95% Standard Bootstrap UCL	1.288	95% Bootstrap-t UCL	1.29
95% Hall's Bootstrap UCL	1.285	95% Percentile Bootstrap UCL	1.287
95% BCA Bootstrap UCL	1.285		
90% Chebyshev(Mean, Sd) UCL	1.31	95% Chebyshev(Mean, Sd) UCL	1.33
97.5% Chebyshev(Mean, Sd) UCL	1.358	99% Chebyshev(Mean, Sd) UCL	1.414

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.265	Mean	12.64
Maximum	30.1	Median	7.65
SD	10.59	Std. Error of Mean	3.531
Coefficient of Variation	0.838	Skewness	0.872
Mean of logged Data	2.212	SD of logged Data	0.86

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.2	95% Adjusted-CLT UCL (Chen-1995)	19.54
		95% Modified-t UCL (Johnson-1978)	19.37

Nonparametric Distribution Free UCLs

95% CLT UCL	18.45	95% Jackknife UCL	19.2
95% Standard Bootstrap UCL	18.03	95% Bootstrap-t UCL	21.29
95% Hall's Bootstrap UCL	17.02	95% Percentile Bootstrap UCL	18.43
95% BCA Bootstrap UCL	19.35		
90% Chebyshev(Mean, Sd) UCL	23.23	95% Chebyshev(Mean, Sd) UCL	28.03
97.5% Chebyshev(Mean, Sd) UCL	34.69	99% Chebyshev(Mean, Sd) UCL	47.77

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.678	Mean	5.391
Maximum	39.4	Median	0.985
SD	12.76	Std. Error of Mean	4.252
Coefficient of Variation	2.366	Skewness	2.997
Mean of logged Data	0.491	SD of logged Data	1.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.3	95% Adjusted-CLT UCL (Chen-1995)	16.92
		95% Modified-t UCL (Johnson-1978)	14.01

Nonparametric Distribution Free UCLs

95% CLT UCL	12.39	95% Jackknife UCL	13.3
95% Standard Bootstrap UCL	12.01	95% Bootstrap-t UCL	223.5
95% Hall's Bootstrap UCL	116.2	95% Percentile Bootstrap UCL	13.85
95% BCA Bootstrap UCL	18.02		
90% Chebyshev(Mean, Sd) UCL	18.15	95% Chebyshev(Mean, Sd) UCL	23.93
97.5% Chebyshev(Mean, Sd) UCL	31.95	99% Chebyshev(Mean, Sd) UCL	47.7

Suggested UCL to Use

95% Hall's Bootstrap UCL 116.2

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	14.04
Maximum	47.4	Median	10.4
SD	14.02	Std. Error of Mean	4.675
Coefficient of Variation	0.999	Skewness	1.924
Mean of logged Data	2.238	SD of logged Data	0.961

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.73	95% Adjusted-CLT UCL (Chen-1995)	24.93
		95% Modified-t UCL (Johnson-1978)	23.23

Nonparametric Distribution Free UCLs

95% CLT UCL	21.72	95% Jackknife UCL	22.73
95% Standard Bootstrap UCL	21.47	95% Bootstrap-t UCL	29.18
95% Hall's Bootstrap UCL	52.17	95% Percentile Bootstrap UCL	22.18
95% BCA Bootstrap UCL	24.52		
90% Chebyshev(Mean, Sd) UCL	28.06	95% Chebyshev(Mean, Sd) UCL	34.41
97.5% Chebyshev(Mean, Sd) UCL	43.23	99% Chebyshev(Mean, Sd) UCL	60.55

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.265	Mean	24.98
Maximum	49.9	Median	16.9
SD	20.07	Std. Error of Mean	6.689
Coefficient of Variation	0.803	Skewness	0.192
Mean of logged Data	2.77	SD of logged Data	1.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.42	95% Adjusted-CLT UCL (Chen-1995)	36.44
		95% Modified-t UCL (Johnson-1978)	37.49

Nonparametric Distribution Free UCLs

95% CLT UCL	35.99	95% Jackknife UCL	37.42
95% Standard Bootstrap UCL	35.39	95% Bootstrap-t UCL	37.4
95% Hall's Bootstrap UCL	33.16	95% Percentile Bootstrap UCL	35.23
95% BCA Bootstrap UCL	36.31		
90% Chebyshev(Mean, Sd) UCL	45.05	95% Chebyshev(Mean, Sd) UCL	54.14
97.5% Chebyshev(Mean, Sd) UCL	66.76	99% Chebyshev(Mean, Sd) UCL	91.54

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:56:23 AM
From File	21078K_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.1	Mean	13.46
Maximum	16.5	Median	14.7
SD	3.125	Std. Error of Mean	1.042
Coefficient of Variation	0.232	Skewness	-1.897
Mean of logged Data	2.565	SD of logged Data	0.303

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.39	95% Adjusted-CLT UCL (Chen-1995)	14.46
		95% Modified-t UCL (Johnson-1978)	15.28

Nonparametric Distribution Free UCLs

95% CLT UCL	15.17	95% Jackknife UCL	15.39
95% Standard Bootstrap UCL	15.08	95% Bootstrap-t UCL	14.86
95% Hall's Bootstrap UCL	14.64	95% Percentile Bootstrap UCL	14.91
95% BCA Bootstrap UCL	14.6		
90% Chebyshev(Mean, Sd) UCL	16.58	95% Chebyshev(Mean, Sd) UCL	18
97.5% Chebyshev(Mean, Sd) UCL	19.96	99% Chebyshev(Mean, Sd) UCL	23.82

Suggested UCL to Use

95% Student's-t UCL	15.39	or 95% Modified-t UCL	15.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.3	Mean	30.36
Maximum	59.3	Median	22.2
SD	17.91	Std. Error of Mean	5.971
Coefficient of Variation	0.59	Skewness	0.689

Mean of logged Data	3.257	SD of logged Data	0.593

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.46	95% Adjusted-CLT UCL (Chen-1995)	41.64
		95% Modified-t UCL (Johnson-1978)	41.69

Nonparametric Distribution Free UCLs

95% CLT UCL	40.18	95% Jackknife UCL	41.46
95% Standard Bootstrap UCL	39.75	95% Bootstrap-t UCL	45.48
95% Hall's Bootstrap UCL	40.85	95% Percentile Bootstrap UCL	39.44
95% BCA Bootstrap UCL	41		
90% Chebyshev(Mean, Sd) UCL	48.27	95% Chebyshev(Mean, Sd) UCL	56.38
97.5% Chebyshev(Mean, Sd) UCL	67.65	99% Chebyshev(Mean, Sd) UCL	89.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	44.4	Mean	51.22
Maximum	59.6	Median	51.4
SD	5.392	Std. Error of Mean	1.797
Coefficient of Variation	0.105	Skewness	0.179
Mean of logged Data	3.931	SD of logged Data	0.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.56	95% Adjusted-CLT UCL (Chen-1995)	54.29
		95% Modified-t UCL (Johnson-1978)	54.58

Nonparametric Distribution Free UCLs

95% CLT UCL	54.18	95% Jackknife UCL	54.56
95% Standard Bootstrap UCL	53.99	95% Bootstrap-t UCL	54.85
95% Hall's Bootstrap UCL	54.17	95% Percentile Bootstrap UCL	53.99
95% BCA Bootstrap UCL	54.13		
90% Chebyshev(Mean, Sd) UCL	56.61	95% Chebyshev(Mean, Sd) UCL	59.06
97.5% Chebyshev(Mean, Sd) UCL	62.45	99% Chebyshev(Mean, Sd) UCL	69.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.94	Mean	0.965
Maximum	0.985	Median	0.97
SD	0.0182	Std. Error of Mean	0.00607
Coefficient of Variation	0.0189	Skewness	-0.269
Mean of logged Data	-0.0362	SD of logged Data	0.0189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.976	95% Adjusted-CLT UCL (Chen-1995)	0.974
		95% Modified-t UCL (Johnson-1978)	0.976

Nonparametric Distribution Free UCLs

95% CLT UCL	0.975	95% Jackknife UCL	0.976
95% Standard Bootstrap UCL	0.974	95% Bootstrap-t UCL	0.974
95% Hall's Bootstrap UCL	0.972	95% Percentile Bootstrap UCL	0.974
95% BCA Bootstrap UCL	0.974		
90% Chebyshev(Mean, Sd) UCL	0.983	95% Chebyshev(Mean, Sd) UCL	0.991
97.5% Chebyshev(Mean, Sd) UCL	1.002	99% Chebyshev(Mean, Sd) UCL	1.025

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.505	Mean	0.614
Maximum	1.03	Median	0.525
SD	0.176	Std. Error of Mean	0.0588
Coefficient of Variation	0.288	Skewness	1.986
Mean of logged Data	-0.518	SD of logged Data	0.246

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.723	95% Adjusted-CLT UCL (Chen-1995)	0.752
		95% Modified-t UCL (Johnson-1978)	0.73

Nonparametric Distribution Free UCLs

95% CLT UCL	0.711	95% Jackknife UCL	0.723
95% Standard Bootstrap UCL	0.704	95% Bootstrap-t UCL	0.874
95% Hall's Bootstrap UCL	0.99	95% Percentile Bootstrap UCL	0.714
95% BCA Bootstrap UCL	0.749		
90% Chebyshev(Mean, Sd) UCL	0.79	95% Chebyshev(Mean, Sd) UCL	0.87
97.5% Chebyshev(Mean, Sd) UCL	0.981	99% Chebyshev(Mean, Sd) UCL	1.199

Suggested UCL to Use

95% Student's-t UCL	0.723	or 95% Modified-t UCL	0.73

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.98	Mean	2.145
Maximum	2.56	Median	2.12
SD	0.17	Std. Error of Mean	0.0566
Coefficient of Variation	0.0792	Skewness	2.135
Mean of logged Data	0.761	SD of logged Data	0.0747

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.25	95% Adjusted-CLT UCL (Chen-1995)	2.281
		95% Modified-t UCL (Johnson-1978)	2.257

Nonparametric Distribution Free UCLs

95% CLT UCL	2.238	95% Jackknife UCL	2.25
95% Standard Bootstrap UCL	2.231	95% Bootstrap-t UCL	2.384
95% Hall's Bootstrap UCL	2.7	95% Percentile Bootstrap UCL	2.241
95% BCA Bootstrap UCL	2.266		
90% Chebyshev(Mean, Sd) UCL	2.315	95% Chebyshev(Mean, Sd) UCL	2.392
97.5% Chebyshev(Mean, Sd) UCL	2.499	99% Chebyshev(Mean, Sd) UCL	2.708

Suggested UCL to Use

95% Student's-t UCL	2.25	or 95% Modified-t UCL	2.257

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	9.317
Maximum	26.5	Median	3.47
SD	10.02	Std. Error of Mean	3.339
Coefficient of Variation	1.075	Skewness	0.954
Mean of logged Data	1.672	SD of logged Data	1.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.53	95% Adjusted-CLT UCL (Chen-1995)	15.94
		95% Modified-t UCL (Johnson-1978)	15.7

Nonparametric Distribution Free UCLs

95% CLT UCL	14.81	95% Jackknife UCL	15.53
95% Standard Bootstrap UCL	14.44	95% Bootstrap-t UCL	17.34
95% Hall's Bootstrap UCL	12.84	95% Percentile Bootstrap UCL	14.65
95% BCA Bootstrap UCL	15.3		
90% Chebyshev(Mean, Sd) UCL	19.33	95% Chebyshev(Mean, Sd) UCL	23.87
97.5% Chebyshev(Mean, Sd) UCL	30.17	99% Chebyshev(Mean, Sd) UCL	42.54

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	12.74
Maximum	39	Median	4.26
SD	15.06	Std. Error of Mean	5.02
Coefficient of Variation	1.182	Skewness	0.987
Mean of logged Data	1.818	SD of logged Data	1.283

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.07	95% Adjusted-CLT UCL (Chen-1995)	22.76
		95% Modified-t UCL (Johnson-1978)	22.35

Nonparametric Distribution Free UCLs

95% CLT UCL	21	95% Jackknife UCL	22.07
95% Standard Bootstrap UCL	20.53	95% Bootstrap-t UCL	24.81
95% Hall's Bootstrap UCL	17.94	95% Percentile Bootstrap UCL	21.05
95% BCA Bootstrap UCL	22.85		
90% Chebyshev(Mean, Sd) UCL	27.8	95% Chebyshev(Mean, Sd) UCL	34.62
97.5% Chebyshev(Mean, Sd) UCL	44.09	99% Chebyshev(Mean, Sd) UCL	62.69

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	16.58
Maximum	44.9	Median	7.13
SD	17.59	Std. Error of Mean	5.863
Coefficient of Variation	1.061	Skewness	0.855
Mean of logged Data	2.22	SD of logged Data	1.17

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.48	95% Adjusted-CLT UCL (Chen-1995)	28.01
		95% Modified-t UCL (Johnson-1978)	27.76

Nonparametric Distribution Free UCLs

95% CLT UCL	26.22	95% Jackknife UCL	27.48
95% Standard Bootstrap UCL	25.75	95% Bootstrap-t UCL	29.87
95% Hall's Bootstrap UCL	22.96	95% Percentile Bootstrap UCL	25.84
95% BCA Bootstrap UCL	27.48		
90% Chebyshev(Mean, Sd) UCL	34.17	95% Chebyshev(Mean, Sd) UCL	42.13
97.5% Chebyshev(Mean, Sd) UCL	53.19	99% Chebyshev(Mean, Sd) UCL	74.92

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	9.152
Maximum	23.8	Median	3.275
SD	8.947	Std. Error of Mean	2.982
Coefficient of Variation	0.978	Skewness	0.933
Mean of logged Data	1.797	SD of logged Data	0.933

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.7	95% Adjusted-CLT UCL (Chen-1995)	15.05
		95% Modified-t UCL (Johnson-1978)	14.85

Nonparametric Distribution Free UCLs

95% CLT UCL	14.06	95% Jackknife UCL	14.7
95% Standard Bootstrap UCL	13.71	95% Bootstrap-t UCL	16.05
95% Hall's Bootstrap UCL	12.04	95% Percentile Bootstrap UCL	13.72
95% BCA Bootstrap UCL	15.05		
90% Chebyshev(Mean, Sd) UCL	18.1	95% Chebyshev(Mean, Sd) UCL	22.15
97.5% Chebyshev(Mean, Sd) UCL	27.78	99% Chebyshev(Mean, Sd) UCL	38.83

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	22.15

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	7.868
Maximum	21	Median	2.63
SD	7.983	Std. Error of Mean	2.661
Coefficient of Variation	1.015	Skewness	0.897
Mean of logged Data	1.576	SD of logged Data	1.034

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.82	95% Adjusted-CLT UCL (Chen-1995)	13.1
		95% Modified-t UCL (Johnson-1978)	12.95

Nonparametric Distribution Free UCLs

95% CLT UCL	12.25	95% Jackknife UCL	12.82
95% Standard Bootstrap UCL	12.07	95% Bootstrap-t UCL	13.96
95% Hall's Bootstrap UCL	10.72	95% Percentile Bootstrap UCL	12.38
95% BCA Bootstrap UCL	12.91		
90% Chebyshev(Mean, Sd) UCL	15.85	95% Chebyshev(Mean, Sd) UCL	19.47
97.5% Chebyshev(Mean, Sd) UCL	24.49	99% Chebyshev(Mean, Sd) UCL	34.35

Suggested UCL to Use

95% Hall's Bootstrap UCL	10.72

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	12.49
Maximum	34.3	Median	4.89
SD	14.22	Std. Error of Mean	4.74
Coefficient of Variation	1.138	Skewness	0.861
Mean of logged Data	1.834	SD of logged Data	1.262

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.31	95% Adjusted-CLT UCL (Chen-1995)	21.74
		95% Modified-t UCL (Johnson-1978)	21.53

Nonparametric Distribution Free UCLs

95% CLT UCL	20.29	95% Jackknife UCL	21.31
95% Standard Bootstrap UCL	19.78	95% Bootstrap-t UCL	22.94
95% Hall's Bootstrap UCL	17.22	95% Percentile Bootstrap UCL	19.49
95% BCA Bootstrap UCL	21.75		
90% Chebyshev(Mean, Sd) UCL	26.71	95% Chebyshev(Mean, Sd) UCL	33.15
97.5% Chebyshev(Mean, Sd) UCL	42.09	99% Chebyshev(Mean, Sd) UCL	59.65

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	3.367
Maximum	4.555	Median	3.245
SD	0.448	Std. Error of Mean	0.149
Coefficient of Variation	0.133	Skewness	2.928
Mean of logged Data	1.207	SD of logged Data	0.117

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.645	95% Adjusted-CLT UCL (Chen-1995)	3.769
		95% Modified-t UCL (Johnson-1978)	3.669

Nonparametric Distribution Free UCLs

95% CLT UCL	3.613	95% Jackknife UCL	3.645
95% Standard Bootstrap UCL	3.6	95% Bootstrap-t UCL	4.973
95% Hall's Bootstrap UCL	5.024	95% Percentile Bootstrap UCL	3.659
95% BCA Bootstrap UCL	3.807		
90% Chebyshev(Mean, Sd) UCL	3.815	95% Chebyshev(Mean, Sd) UCL	4.018
97.5% Chebyshev(Mean, Sd) UCL	4.3	99% Chebyshev(Mean, Sd) UCL	4.854

Suggested UCL to Use

95% Student's-t UCL	3.645	or 95% Modified-t UCL	3.669

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	17.4
Maximum	48.9	Median	4.92
SD	19.48	Std. Error of Mean	6.492
Coefficient of Variation	1.119	Skewness	0.859
Mean of logged Data	2.149	SD of logged Data	1.311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	29.47	95% Adjusted-CLT UCL (Chen-1995)	30.07
		95% Modified-t UCL (Johnson-1978)	29.78

Nonparametric Distribution Free UCLs

95% CLT UCL	28.08	95% Jackknife UCL	29.47
95% Standard Bootstrap UCL	27.42	95% Bootstrap-t UCL	32.54
95% Hall's Bootstrap UCL	24.52	95% Percentile Bootstrap UCL	27.34
95% BCA Bootstrap UCL	29.73		
90% Chebyshev(Mean, Sd) UCL	36.88	95% Chebyshev(Mean, Sd) UCL	45.7
97.5% Chebyshev(Mean, Sd) UCL	57.95	99% Chebyshev(Mean, Sd) UCL	82

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.215	Mean	1.28
Maximum	1.31	Median	1.285
SD	0.0314	Std. Error of Mean	0.0105
Coefficient of Variation	0.0246	Skewness	-1.103
Mean of logged Data	0.247	SD of logged Data	0.0248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.299	95% Adjusted-CLT UCL (Chen-1995)	1.293
		95% Modified-t UCL (Johnson-1978)	1.299

Nonparametric Distribution Free UCLs

95% CLT UCL	1.297	95% Jackknife UCL	1.299
95% Standard Bootstrap UCL	1.296	95% Bootstrap-t UCL	1.295
95% Hall's Bootstrap UCL	1.293	95% Percentile Bootstrap UCL	1.296
95% BCA Bootstrap UCL	1.293		
90% Chebyshev(Mean, Sd) UCL	1.311	95% Chebyshev(Mean, Sd) UCL	1.326
97.5% Chebyshev(Mean, Sd) UCL	1.345	99% Chebyshev(Mean, Sd) UCL	1.384

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	10.33
Maximum	28	Median	3.93
SD	10.28	Std. Error of Mean	3.427
Coefficient of Variation	0.995	Skewness	0.974
Mean of logged Data	1.898	SD of logged Data	0.961

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.7	95% Adjusted-CLT UCL (Chen-1995)	17.16
		95% Modified-t UCL (Johnson-1978)	16.89

Nonparametric Distribution Free UCLs

95% CLT UCL	15.97	95% Jackknife UCL	16.7
95% Standard Bootstrap UCL	15.57	95% Bootstrap-t UCL	18.62
95% Hall's Bootstrap UCL	13.78	95% Percentile Bootstrap UCL	16.03
95% BCA Bootstrap UCL	16.63		
90% Chebyshev(Mean, Sd) UCL	20.61	95% Chebyshev(Mean, Sd) UCL	25.27
97.5% Chebyshev(Mean, Sd) UCL	31.73	99% Chebyshev(Mean, Sd) UCL	44.43

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	25.27

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.945	Mean	1.283
Maximum	1.99	Median	0.985
SD	0.466	Std. Error of Mean	0.155
Coefficient of Variation	0.364	Skewness	0.902
Mean of logged Data	0.196	SD of logged Data	0.335

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.572	95% Adjusted-CLT UCL (Chen-1995)	1.588

		95% Modified-t UCL (Johnson-1978)	1.58

Nonparametric Distribution Free UCLs

95% CLT UCL	1.538	95% Jackknife UCL	1.572
95% Standard Bootstrap UCL	1.52	95% Bootstrap-t UCL	1.661
95% Hall's Bootstrap UCL	1.434	95% Percentile Bootstrap UCL	1.52
95% BCA Bootstrap UCL	1.556		
90% Chebyshev(Mean, Sd) UCL	1.749	95% Chebyshev(Mean, Sd) UCL	1.96
97.5% Chebyshev(Mean, Sd) UCL	2.254	99% Chebyshev(Mean, Sd) UCL	2.829

Suggested UCL to Use

95% Student's-t UCL	1.572	or 95% Modified-t UCL	1.58

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	7.912
Maximum	19	Median	3.28
SD	6.827	Std. Error of Mean	2.276
Coefficient of Variation	0.863	Skewness	0.927
Mean of logged Data	1.755	SD of logged Data	0.81

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.14	95% Adjusted-CLT UCL (Chen-1995)	12.41
		95% Modified-t UCL (Johnson-1978)	12.26

Nonparametric Distribution Free UCLs

95% CLT UCL	11.66	95% Jackknife UCL	12.14
95% Standard Bootstrap UCL	11.37	95% Bootstrap-t UCL	13.44
95% Hall's Bootstrap UCL	10.23	95% Percentile Bootstrap UCL	11.67
95% BCA Bootstrap UCL	12.07		
90% Chebyshev(Mean, Sd) UCL	14.74	95% Chebyshev(Mean, Sd) UCL	17.83
97.5% Chebyshev(Mean, Sd) UCL	22.12	99% Chebyshev(Mean, Sd) UCL	30.56

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.83

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.43	Mean	17.47
Maximum	49.4	Median	5.62
SD	19.09	Std. Error of Mean	6.365
Coefficient of Variation	1.093	Skewness	0.901
Mean of logged Data	2.232	SD of logged Data	1.212

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.3	95% Adjusted-CLT UCL (Chen-1995)	29.98
		95% Modified-t UCL (Johnson-1978)	29.62

Nonparametric Distribution Free UCLs

95% CLT UCL	27.94	95% Jackknife UCL	29.3
95% Standard Bootstrap UCL	27.4	95% Bootstrap-t UCL	32.41
95% Hall's Bootstrap UCL	24.45	95% Percentile Bootstrap UCL	27.39
95% BCA Bootstrap UCL	28.1		
90% Chebyshev(Mean, Sd) UCL	36.56	95% Chebyshev(Mean, Sd) UCL	45.21
97.5% Chebyshev(Mean, Sd) UCL	57.21	99% Chebyshev(Mean, Sd) UCL	80.79

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:57:43 AM
From File	21078L_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.2	Mean	11.61
Maximum	13.2	Median	11.5
SD	1.033	Std. Error of Mean	0.344
Coefficient of Variation	0.0889	Skewness	0.408
Mean of logged Data	2.448	SD of logged Data	0.0881

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.25	95% Adjusted-CLT UCL (Chen-1995)	12.23
		95% Modified-t UCL (Johnson-1978)	12.26

Nonparametric Distribution Free UCLs

95% CLT UCL	12.18	95% Jackknife UCL	12.25
95% Standard Bootstrap UCL	12.14	95% Bootstrap-t UCL	12.37
95% Hall's Bootstrap UCL	12.3	95% Percentile Bootstrap UCL	12.18
95% BCA Bootstrap UCL	12.18		
90% Chebyshev(Mean, Sd) UCL	12.64	95% Chebyshev(Mean, Sd) UCL	13.11
97.5% Chebyshev(Mean, Sd) UCL	13.76	99% Chebyshev(Mean, Sd) UCL	15.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.5	Mean	17.77
Maximum	24.2	Median	15.7
SD	5.273	Std. Error of Mean	1.758
Coefficient of Variation	0.297	Skewness	0.00405
Mean of logged Data	2.836	SD of logged Data	0.311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.03	95% Adjusted-CLT UCL (Chen-1995)	20.66
		95% Modified-t UCL (Johnson-1978)	21.04

Nonparametric Distribution Free UCLs

95% CLT UCL	20.66	95% Jackknife UCL	21.03
95% Standard Bootstrap UCL	20.51	95% Bootstrap-t UCL	20.91
95% Hall's Bootstrap UCL	20.13	95% Percentile Bootstrap UCL	20.4
95% BCA Bootstrap UCL	20.41		
90% Chebyshev(Mean, Sd) UCL	23.04	95% Chebyshev(Mean, Sd) UCL	25.43
97.5% Chebyshev(Mean, Sd) UCL	28.74	99% Chebyshev(Mean, Sd) UCL	35.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	39.1	Mean	42.51
Maximum	46.9	Median	42.4
SD	2.379	Std. Error of Mean	0.793
Coefficient of Variation	0.056	Skewness	0.41
Mean of logged Data	3.748	SD of logged Data	0.0556

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.99	95% Adjusted-CLT UCL (Chen-1995)	43.93
		95% Modified-t UCL (Johnson-1978)	44

Nonparametric Distribution Free UCLs

95% CLT UCL	43.82	95% Jackknife UCL	43.99
95% Standard Bootstrap UCL	43.76	95% Bootstrap-t UCL	44.14
95% Hall's Bootstrap UCL	44.22	95% Percentile Bootstrap UCL	43.82
95% BCA Bootstrap UCL	43.79		
90% Chebyshev(Mean, Sd) UCL	44.89	95% Chebyshev(Mean, Sd) UCL	45.97
97.5% Chebyshev(Mean, Sd) UCL	47.46	99% Chebyshev(Mean, Sd) UCL	50.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.581	Mean	0.888
Maximum	0.995	Median	0.935
SD	0.132	Std. Error of Mean	0.0441
Coefficient of Variation	0.149	Skewness	-1.848
Mean of logged Data	-0.13	SD of logged Data	0.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.97	95% Adjusted-CLT UCL (Chen-1995)	0.932
		95% Modified-t UCL (Johnson-1978)	0.966

Nonparametric Distribution Free UCLs

95% CLT UCL	0.961	95% Jackknife UCL	0.97
95% Standard Bootstrap UCL	0.955	95% Bootstrap-t UCL	0.949
95% Hall's Bootstrap UCL	0.939	95% Percentile Bootstrap UCL	0.95
95% BCA Bootstrap UCL	0.938		
90% Chebyshev(Mean, Sd) UCL	1.021	95% Chebyshev(Mean, Sd) UCL	1.08
97.5% Chebyshev(Mean, Sd) UCL	1.164	99% Chebyshev(Mean, Sd) UCL	1.327

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.305	Mean	0.462
Maximum	0.53	Median	0.505
SD	0.0905	Std. Error of Mean	0.0302
Coefficient of Variation	0.196	Skewness	-1.148
Mean of logged Data	-0.791	SD of logged Data	0.219

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.518	95% Adjusted-CLT UCL (Chen-1995)	0.5
		95% Modified-t UCL (Johnson-1978)	0.517

Nonparametric Distribution Free UCLs

95% CLT UCL	0.512	95% Jackknife UCL	0.518
95% Standard Bootstrap UCL	0.51	95% Bootstrap-t UCL	0.508
95% Hall's Bootstrap UCL	0.498	95% Percentile Bootstrap UCL	0.508
95% BCA Bootstrap UCL	0.5		
90% Chebyshev(Mean, Sd) UCL	0.553	95% Chebyshev(Mean, Sd) UCL	0.594
97.5% Chebyshev(Mean, Sd) UCL	0.651	99% Chebyshev(Mean, Sd) UCL	0.763

Suggested UCL to Use

95% Student's-t UCL	0.518	or 95% Modified-t UCL	0.517

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.975	Mean	2.076
Maximum	2.16	Median	2.05
SD	0.0697	Std. Error of Mean	0.0232
Coefficient of Variation	0.0336	Skewness	-0.0571
Mean of logged Data	0.73	SD of logged Data	0.0336

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.119	95% Adjusted-CLT UCL (Chen-1995)	2.114
		95% Modified-t UCL (Johnson-1978)	2.119

Nonparametric Distribution Free UCLs

95% CLT UCL	2.114	95% Jackknife UCL	2.119
95% Standard Bootstrap UCL	2.112	95% Bootstrap-t UCL	2.118
95% Hall's Bootstrap UCL	2.108	95% Percentile Bootstrap UCL	2.114
95% BCA Bootstrap UCL	2.111		
90% Chebyshev(Mean, Sd) UCL	2.146	95% Chebyshev(Mean, Sd) UCL	2.177
97.5% Chebyshev(Mean, Sd) UCL	2.221	99% Chebyshev(Mean, Sd) UCL	2.307

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	13.65
Maximum	75.2	Median	3.39
SD	23.48	Std. Error of Mean	7.828
Coefficient of Variation	1.721	Skewness	2.811
Mean of logged Data	1.827	SD of logged Data	1.185

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.2	95% Adjusted-CLT UCL (Chen-1995)	34.36
		95% Modified-t UCL (Johnson-1978)	29.43

Nonparametric Distribution Free UCLs

95% CLT UCL	26.52	95% Jackknife UCL	28.2
95% Standard Bootstrap UCL	25.94	95% Bootstrap-t UCL	75.5
95% Hall's Bootstrap UCL	76.55	95% Percentile Bootstrap UCL	28.83
95% BCA Bootstrap UCL	36.84		
90% Chebyshev(Mean, Sd) UCL	37.13	95% Chebyshev(Mean, Sd) UCL	47.77
97.5% Chebyshev(Mean, Sd) UCL	62.53	99% Chebyshev(Mean, Sd) UCL	91.53

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	13.77
Maximum	70.2	Median	4.37
SD	21.82	Std. Error of Mean	7.273
Coefficient of Variation	1.585	Skewness	2.675
Mean of logged Data	1.868	SD of logged Data	1.215

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.29	95% Adjusted-CLT UCL (Chen-1995)	32.66
		95% Modified-t UCL (Johnson-1978)	28.38

Nonparametric Distribution Free UCLs

95% CLT UCL	25.73	95% Jackknife UCL	27.29
95% Standard Bootstrap UCL	25.11	95% Bootstrap-t UCL	59.12
95% Hall's Bootstrap UCL	67.29	95% Percentile Bootstrap UCL	27.15
95% BCA Bootstrap UCL	34.48		
90% Chebyshev(Mean, Sd) UCL	35.59	95% Chebyshev(Mean, Sd) UCL	45.47
97.5% Chebyshev(Mean, Sd) UCL	59.19	99% Chebyshev(Mean, Sd) UCL	86.14

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.61	Mean	18.33
Maximum	85.1	Median	6.28
SD	26.3	Std. Error of Mean	8.765
Coefficient of Variation	1.435	Skewness	2.504
Mean of logged Data	2.243	SD of logged Data	1.16

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.63	95% Adjusted-CLT UCL (Chen-1995)	40.56
		95% Modified-t UCL (Johnson-1978)	35.85

Nonparametric Distribution Free UCLs

95% CLT UCL	32.75	95% Jackknife UCL	34.63
95% Standard Bootstrap UCL	31.97	95% Bootstrap-t UCL	62.9
95% Hall's Bootstrap UCL	82.38	95% Percentile Bootstrap UCL	33.65
95% BCA Bootstrap UCL	41.34		
90% Chebyshev(Mean, Sd) UCL	44.62	95% Chebyshev(Mean, Sd) UCL	56.53
97.5% Chebyshev(Mean, Sd) UCL	73.07	99% Chebyshev(Mean, Sd) UCL	105.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.51	Mean	5.731
Maximum	10.8	Median	3.285
SD	3.456	Std. Error of Mean	1.152
Coefficient of Variation	0.603	Skewness	0.643
Mean of logged Data	1.585	SD of logged Data	0.597

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.873	95% Adjusted-CLT UCL (Chen-1995)	7.889
		95% Modified-t UCL (Johnson-1978)	7.914

Nonparametric Distribution Free UCLs

95% CLT UCL	7.625	95% Jackknife UCL	7.873
95% Standard Bootstrap UCL	7.519	95% Bootstrap-t UCL	8.341
95% Hall's Bootstrap UCL	7.28	95% Percentile Bootstrap UCL	7.636
95% BCA Bootstrap UCL	7.7		
90% Chebyshev(Mean, Sd) UCL	9.186	95% Chebyshev(Mean, Sd) UCL	10.75
97.5% Chebyshev(Mean, Sd) UCL	12.92	99% Chebyshev(Mean, Sd) UCL	17.19

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.75

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	4.54
Maximum	9.44	Median	2.59
SD	2.962	Std. Error of Mean	0.987
Coefficient of Variation	0.653	Skewness	0.699
Mean of logged Data	1.322	SD of logged Data	0.652

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.376	95% Adjusted-CLT UCL (Chen-1995)	6.41
		95% Modified-t UCL (Johnson-1978)	6.415

Nonparametric Distribution Free UCLs

95% CLT UCL	6.164	95% Jackknife UCL	6.376
95% Standard Bootstrap UCL	6.048	95% Bootstrap-t UCL	6.97
95% Hall's Bootstrap UCL	6.009	95% Percentile Bootstrap UCL	6.041
95% BCA Bootstrap UCL	6.194		
90% Chebyshev(Mean, Sd) UCL	7.502	95% Chebyshev(Mean, Sd) UCL	8.844
97.5% Chebyshev(Mean, Sd) UCL	10.71	99% Chebyshev(Mean, Sd) UCL	14.37

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	15.8
Maximum	75.5	Median	8.12
SD	23.14	Std. Error of Mean	7.714
Coefficient of Variation	1.465	Skewness	2.648
Mean of logged Data	2.11	SD of logged Data	1.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.15	95% Adjusted-CLT UCL (Chen-1995)	35.76
		95% Modified-t UCL (Johnson-1978)	31.28

Nonparametric Distribution Free UCLs

95% CLT UCL	28.49	95% Jackknife UCL	30.15
95% Standard Bootstrap UCL	27.88	95% Bootstrap-t UCL	59.68
95% Hall's Bootstrap UCL	74.77	95% Percentile Bootstrap UCL	30.61
95% BCA Bootstrap UCL	33.85		
90% Chebyshev(Mean, Sd) UCL	38.94	95% Chebyshev(Mean, Sd) UCL	49.43
97.5% Chebyshev(Mean, Sd) UCL	63.98	99% Chebyshev(Mean, Sd) UCL	92.56

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.76	Mean	9.093
Maximum	56.6	Median	3.24
SD	17.82	Std. Error of Mean	5.939
Coefficient of Variation	1.959	Skewness	2.999
Mean of logged Data	1.468	SD of logged Data	0.965

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.14	95% Adjusted-CLT UCL (Chen-1995)	25.21
		95% Modified-t UCL (Johnson-1978)	21.13

Nonparametric Distribution Free UCLs

95% CLT UCL	18.86	95% Jackknife UCL	20.14
95% Standard Bootstrap UCL	18.07	95% Bootstrap-t UCL	1212
95% Hall's Bootstrap UCL	553.6	95% Percentile Bootstrap UCL	20.95
95% BCA Bootstrap UCL	26.85		
90% Chebyshev(Mean, Sd) UCL	26.91	95% Chebyshev(Mean, Sd) UCL	34.98
97.5% Chebyshev(Mean, Sd) UCL	46.18	99% Chebyshev(Mean, Sd) UCL	68.18

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	34.98

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	19.53
Maximum	92.3	Median	6.05
SD	28.47	Std. Error of Mean	9.491
Coefficient of Variation	1.458	Skewness	2.558
Mean of logged Data	2.272	SD of logged Data	1.218

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.18	95% Adjusted-CLT UCL (Chen-1995)	43.78
		95% Modified-t UCL (Johnson-1978)	38.53

Nonparametric Distribution Free UCLs

95% CLT UCL	35.14	95% Jackknife UCL	37.18
95% Standard Bootstrap UCL	34.32	95% Bootstrap-t UCL	73.61
95% Hall's Bootstrap UCL	91.42	95% Percentile Bootstrap UCL	35.8
95% BCA Bootstrap UCL	46.45		
90% Chebyshev(Mean, Sd) UCL	48	95% Chebyshev(Mean, Sd) UCL	60.9
97.5% Chebyshev(Mean, Sd) UCL	78.8	99% Chebyshev(Mean, Sd) UCL	114

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.235	Mean	6.443
Maximum	47.7	Median	1.31
SD	15.47	Std. Error of Mean	5.157
Coefficient of Variation	2.401	Skewness	3
Mean of logged Data	0.652	SD of logged Data	1.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.03	95% Adjusted-CLT UCL (Chen-1995)	20.44
		95% Modified-t UCL (Johnson-1978)	16.89

Nonparametric Distribution Free UCLs

95% CLT UCL	14.93	95% Jackknife UCL	16.03
95% Standard Bootstrap UCL	14.69	95% Bootstrap-t UCL	2579
95% Hall's Bootstrap UCL	1390	95% Percentile Bootstrap UCL	16.75
95% BCA Bootstrap UCL	21.91		
90% Chebyshev(Mean, Sd) UCL	21.91	95% Chebyshev(Mean, Sd) UCL	28.92
97.5% Chebyshev(Mean, Sd) UCL	38.65	99% Chebyshev(Mean, Sd) UCL	57.76

Suggested UCL to Use

95% Hall's Bootstrap UCL 1390

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.9	Mean	6.391
Maximum	12.4	Median	3.4
SD	4.11	Std. Error of Mean	1.37
Coefficient of Variation	0.643	Skewness	0.66
Mean of logged Data	1.671	SD of logged Data	0.637

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.938	95% Adjusted-CLT UCL (Chen-1995)	8.966
		95% Modified-t UCL (Johnson-1978)	8.989

Nonparametric Distribution Free UCLs

95% CLT UCL	8.644	95% Jackknife UCL	8.938
95% Standard Bootstrap UCL	8.451	95% Bootstrap-t UCL	9.546
95% Hall's Bootstrap UCL	8.279	95% Percentile Bootstrap UCL	8.5
95% BCA Bootstrap UCL	8.802		
90% Chebyshev(Mean, Sd) UCL	10.5	95% Chebyshev(Mean, Sd) UCL	12.36
97.5% Chebyshev(Mean, Sd) UCL	14.95	99% Chebyshev(Mean, Sd) UCL	20.02

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.36

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.02	Mean	1.291
Maximum	1.85	Median	1.21
SD	0.324	Std. Error of Mean	0.108
Coefficient of Variation	0.251	Skewness	1.31
Mean of logged Data	0.231	SD of logged Data	0.228

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.492	95% Adjusted-CLT UCL (Chen-1995)	1.519
		95% Modified-t UCL (Johnson-1978)	1.5

Nonparametric Distribution Free UCLs

95% CLT UCL	1.469	95% Jackknife UCL	1.492
95% Standard Bootstrap UCL	1.458	95% Bootstrap-t UCL	1.78
95% Hall's Bootstrap UCL	2.726	95% Percentile Bootstrap UCL	1.47
95% BCA Bootstrap UCL	1.506		
90% Chebyshev(Mean, Sd) UCL	1.615	95% Chebyshev(Mean, Sd) UCL	1.761
97.5% Chebyshev(Mean, Sd) UCL	1.965	99% Chebyshev(Mean, Sd) UCL	2.364

Suggested UCL to Use

95% Student's-t UCL	1.492	or 95% Modified-t UCL	1.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.74	Mean	12.79
Maximum	71.5	Median	3.285
SD	22.25	Std. Error of Mean	7.415
Coefficient of Variation	1.74	Skewness	2.885
Mean of logged Data	1.837	SD of logged Data	1.068

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.57	95% Adjusted-CLT UCL (Chen-1995)	32.6
		95% Modified-t UCL (Johnson-1978)	27.76

Nonparametric Distribution Free UCLs

95% CLT UCL	24.98	95% Jackknife UCL	26.57
95% Standard Bootstrap UCL	24.3	95% Bootstrap-t UCL	82.04
95% Hall's Bootstrap UCL	76.97	95% Percentile Bootstrap UCL	27.22
95% BCA Bootstrap UCL	33.93		
90% Chebyshev(Mean, Sd) UCL	35.03	95% Chebyshev(Mean, Sd) UCL	45.11
97.5% Chebyshev(Mean, Sd) UCL	59.09	99% Chebyshev(Mean, Sd) UCL	86.57

Suggested UCL to Use

95% Hall's Bootstrap UCL	76.97

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	10.83
Maximum	22.5	Median	5.75
SD	8.046	Std. Error of Mean	2.682
Coefficient of Variation	0.743	Skewness	0.367
Mean of logged Data	2.075	SD of logged Data	0.878

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.82	95% Adjusted-CLT UCL (Chen-1995)	15.59
		95% Modified-t UCL (Johnson-1978)	15.87

Nonparametric Distribution Free UCLs

95% CLT UCL	15.24	95% Jackknife UCL	15.82
95% Standard Bootstrap UCL	15.07	95% Bootstrap-t UCL	15.96
95% Hall's Bootstrap UCL	14.21	95% Percentile Bootstrap UCL	15.19
95% BCA Bootstrap UCL	15.24		
90% Chebyshev(Mean, Sd) UCL	18.88	95% Chebyshev(Mean, Sd) UCL	22.52
97.5% Chebyshev(Mean, Sd) UCL	27.58	99% Chebyshev(Mean, Sd) UCL	37.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 8:59:00 AM
From File	21078M_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	15.8	Mean	17.47
Maximum	19.8	Median	16.6
SD	1.684	Std. Error of Mean	0.561
Coefficient of Variation	0.0964	Skewness	0.525
Mean of logged Data	2.856	SD of logged Data	0.0949

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.51	95% Adjusted-CLT UCL (Chen-1995)	18.5
		95% Modified-t UCL (Johnson-1978)	18.53

Nonparametric Distribution Free UCLs

95% CLT UCL	18.39	95% Jackknife UCL	18.51
95% Standard Bootstrap UCL	18.36	95% Bootstrap-t UCL	18.71
95% Hall's Bootstrap UCL	18.26	95% Percentile Bootstrap UCL	18.37
95% BCA Bootstrap UCL	18.39		
90% Chebyshev(Mean, Sd) UCL	19.15	95% Chebyshev(Mean, Sd) UCL	19.91
97.5% Chebyshev(Mean, Sd) UCL	20.97	99% Chebyshev(Mean, Sd) UCL	23.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	13.5	Mean	60.63
Maximum	100	Median	59.2
SD	32.09	Std. Error of Mean	10.7
Coefficient of Variation	0.529	Skewness	-0.366
Mean of logged Data	3.902	SD of logged Data	0.773

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	80.52	95% Adjusted-CLT UCL (Chen-1995)	76.83
		95% Modified-t UCL (Johnson-1978)	80.3

Nonparametric Distribution Free UCLs

95% CLT UCL	78.23	95% Jackknife UCL	80.52
95% Standard Bootstrap UCL	77.42	95% Bootstrap-t UCL	79.25
95% Hall's Bootstrap UCL	76.09	95% Percentile Bootstrap UCL	77.69
95% BCA Bootstrap UCL	76.11		
90% Chebyshev(Mean, Sd) UCL	92.72	95% Chebyshev(Mean, Sd) UCL	107.3
97.5% Chebyshev(Mean, Sd) UCL	127.4	99% Chebyshev(Mean, Sd) UCL	167.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	56	Mean	62.34
Maximum	67.5	Median	62.6
SD	3.892	Std. Error of Mean	1.297
Coefficient of Variation	0.0624	Skewness	-0.184
Mean of logged Data	4.131	SD of logged Data	0.0629

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.76	95% Adjusted-CLT UCL (Chen-1995)	64.39
		95% Modified-t UCL (Johnson-1978)	64.74

Nonparametric Distribution Free UCLs

95% CLT UCL	64.48	95% Jackknife UCL	64.76
95% Standard Bootstrap UCL	64.32	95% Bootstrap-t UCL	64.8
95% Hall's Bootstrap UCL	64.26	95% Percentile Bootstrap UCL	64.31
95% BCA Bootstrap UCL	64.22		
90% Chebyshev(Mean, Sd) UCL	66.24	95% Chebyshev(Mean, Sd) UCL	68
97.5% Chebyshev(Mean, Sd) UCL	70.45	99% Chebyshev(Mean, Sd) UCL	75.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.656	Mean	0.99
Maximum	1.61	Median	0.97
SD	0.273	Std. Error of Mean	0.091
Coefficient of Variation	0.276	Skewness	1.467
Mean of logged Data	-0.0401	SD of logged Data	0.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.16	95% Adjusted-CLT UCL (Chen-1995)	1.188
		95% Modified-t UCL (Johnson-1978)	1.167

Nonparametric Distribution Free UCLs

95% CLT UCL	1.14	95% Jackknife UCL	1.16
95% Standard Bootstrap UCL	1.13	95% Bootstrap-t UCL	1.23
95% Hall's Bootstrap UCL	2.05	95% Percentile Bootstrap UCL	1.143
95% BCA Bootstrap UCL	1.186		
90% Chebyshev(Mean, Sd) UCL	1.263	95% Chebyshev(Mean, Sd) UCL	1.387
97.5% Chebyshev(Mean, Sd) UCL	1.559	99% Chebyshev(Mean, Sd) UCL	1.896

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.341	Mean	7.322
Maximum	56.4	Median	0.52
SD	18.49	Std. Error of Mean	6.164
Coefficient of Variation	2.525	Skewness	2.949
Mean of logged Data	0.0939	SD of logged Data	1.712

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.78	95% Adjusted-CLT UCL (Chen-1995)	23.93
		95% Modified-t UCL (Johnson-1978)	19.79

Nonparametric Distribution Free UCLs

95% CLT UCL	17.46	95% Jackknife UCL	18.78
95% Standard Bootstrap UCL	16.86	95% Bootstrap-t UCL	790.6
95% Hall's Bootstrap UCL	482.4	95% Percentile Bootstrap UCL	19.17
95% BCA Bootstrap UCL	25.97		
90% Chebyshev(Mean, Sd) UCL	25.81	95% Chebyshev(Mean, Sd) UCL	34.19
97.5% Chebyshev(Mean, Sd) UCL	45.81	99% Chebyshev(Mean, Sd) UCL	68.65

Suggested UCL to Use

95% Hall's Bootstrap UCL 482.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.67	Mean	3.551
Maximum	15.5	Median	2.12
SD	4.484	Std. Error of Mean	1.495
Coefficient of Variation	1.263	Skewness	2.991
Mean of logged Data	0.942	SD of logged Data	0.68

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.331	95% Adjusted-CLT UCL (Chen-1995)	7.602
		95% Modified-t UCL (Johnson-1978)	6.579

Nonparametric Distribution Free UCLs

95% CLT UCL	6.01	95% Jackknife UCL	6.331
95% Standard Bootstrap UCL	5.839	95% Bootstrap-t UCL	65.81
95% Hall's Bootstrap UCL	46.33	95% Percentile Bootstrap UCL	6.537
95% BCA Bootstrap UCL	8.014		

90% Chebyshev(Mean, Sd) UCL	8.035	95% Chebyshev(Mean, Sd) UCL	10.07
97.5% Chebyshev(Mean, Sd) UCL	12.89	99% Chebyshev(Mean, Sd) UCL	18.42

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.1	Mean	23.52
Maximum	122	Median	4.96
SD	39.62	Std. Error of Mean	13.21
Coefficient of Variation	1.684	Skewness	2.386
Mean of logged Data	2.174	SD of logged Data	1.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.09	95% Adjusted-CLT UCL (Chen-1995)	56.47
		95% Modified-t UCL (Johnson-1978)	49.84

Nonparametric Distribution Free UCLs

95% CLT UCL	45.25	95% Jackknife UCL	48.09
95% Standard Bootstrap UCL	43.86	95% Bootstrap-t UCL	171.1
95% Hall's Bootstrap UCL	172.2	95% Percentile Bootstrap UCL	46.58
95% BCA Bootstrap UCL	59.46		
90% Chebyshev(Mean, Sd) UCL	63.15	95% Chebyshev(Mean, Sd) UCL	81.1
97.5% Chebyshev(Mean, Sd) UCL	106	99% Chebyshev(Mean, Sd) UCL	154.9

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.1	Mean	13.06
Maximum	50	Median	4.96
SD	15.93	Std. Error of Mean	5.311
Coefficient of Variation	1.22	Skewness	1.873
Mean of logged Data	1.992	SD of logged Data	1.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.93	95% Adjusted-CLT UCL (Chen-1995)	25.34
		95% Modified-t UCL (Johnson-1978)	23.49

Nonparametric Distribution Free UCLs

95% CLT UCL	21.79	95% Jackknife UCL	22.93
95% Standard Bootstrap UCL	21.26	95% Bootstrap-t UCL	33.77
95% Hall's Bootstrap UCL	29.5	95% Percentile Bootstrap UCL	22.17
95% BCA Bootstrap UCL	24.81		
90% Chebyshev(Mean, Sd) UCL	28.99	95% Chebyshev(Mean, Sd) UCL	36.21
97.5% Chebyshev(Mean, Sd) UCL	46.22	99% Chebyshev(Mean, Sd) UCL	65.9

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.23	Mean	17.68
Maximum	68	Median	4.96
SD	22.09	Std. Error of Mean	7.364
Coefficient of Variation	1.25	Skewness	1.774
Mean of logged Data	2.249	SD of logged Data	1.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.37	95% Adjusted-CLT UCL (Chen-1995)	34.44
		95% Modified-t UCL (Johnson-1978)	32.1

Nonparametric Distribution Free UCLs

95% CLT UCL	29.79	95% Jackknife UCL	31.37
95% Standard Bootstrap UCL	29.11	95% Bootstrap-t UCL	43.25
95% Hall's Bootstrap UCL	32.77	95% Percentile Bootstrap UCL	30.31
95% BCA Bootstrap UCL	32.4		
90% Chebyshev(Mean, Sd) UCL	39.77	95% Chebyshev(Mean, Sd) UCL	49.78
97.5% Chebyshev(Mean, Sd) UCL	63.67	99% Chebyshev(Mean, Sd) UCL	90.95

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.075	Mean	9.528
Maximum	34	Median	3.305
SD	10.74	Std. Error of Mean	3.581
Coefficient of Variation	1.128	Skewness	1.793
Mean of logged Data	1.798	SD of logged Data	0.946

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.19	95% Adjusted-CLT UCL (Chen-1995)	17.71
		95% Modified-t UCL (Johnson-1978)	16.54

Nonparametric Distribution Free UCLs

95% CLT UCL	15.42	95% Jackknife UCL	16.19
95% Standard Bootstrap UCL	15.05	95% Bootstrap-t UCL	23.9
95% Hall's Bootstrap UCL	18.72	95% Percentile Bootstrap UCL	15.78
95% BCA Bootstrap UCL	16.72		
90% Chebyshev(Mean, Sd) UCL	20.27	95% Chebyshev(Mean, Sd) UCL	25.14
97.5% Chebyshev(Mean, Sd) UCL	31.89	99% Chebyshev(Mean, Sd) UCL	45.16

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	25.14

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	16.1
Maximum	89.8	Median	2.15
SD	29.28	Std. Error of Mean	9.76
Coefficient of Variation	1.818	Skewness	2.482
Mean of logged Data	1.67	SD of logged Data	1.428

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.25	95% Adjusted-CLT UCL (Chen-1995)	40.78
		95% Modified-t UCL (Johnson-1978)	35.6

Nonparametric Distribution Free UCLs

95% CLT UCL	32.16	95% Jackknife UCL	34.25
95% Standard Bootstrap UCL	31.29	95% Bootstrap-t UCL	156.5
95% Hall's Bootstrap UCL	174.9	95% Percentile Bootstrap UCL	33.17
95% BCA Bootstrap UCL	39.85		
90% Chebyshev(Mean, Sd) UCL	45.38	95% Chebyshev(Mean, Sd) UCL	58.65
97.5% Chebyshev(Mean, Sd) UCL	77.05	99% Chebyshev(Mean, Sd) UCL	113.2

Suggested UCL to Use

95% Hall's Bootstrap UCL 174.9

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.1	Mean	13.7
Maximum	51.2	Median	4.96
SD	16.48	Std. Error of Mean	5.495
Coefficient of Variation	1.203	Skewness	1.761
Mean of logged Data	2.03	SD of logged Data	1.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.92	95% Adjusted-CLT UCL (Chen-1995)	26.19
		95% Modified-t UCL (Johnson-1978)	24.46

Nonparametric Distribution Free UCLs

95% CLT UCL	22.74	95% Jackknife UCL	23.92
95% Standard Bootstrap UCL	22.23	95% Bootstrap-t UCL	32.34
95% Hall's Bootstrap UCL	25.1	95% Percentile Bootstrap UCL	23.13
95% BCA Bootstrap UCL	25.05		
90% Chebyshev(Mean, Sd) UCL	30.19	95% Chebyshev(Mean, Sd) UCL	37.65
97.5% Chebyshev(Mean, Sd) UCL	48.02	99% Chebyshev(Mean, Sd) UCL	68.38

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.03	Mean	9.554
Maximum	58.9	Median	3.265
SD	18.51	Std. Error of Mean	6.171
Coefficient of Variation	1.938	Skewness	2.996
Mean of logged Data	1.528	SD of logged Data	0.965

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.03	95% Adjusted-CLT UCL (Chen-1995)	26.29
		95% Modified-t UCL (Johnson-1978)	22.06

Nonparametric Distribution Free UCLs

95% CLT UCL	19.7	95% Jackknife UCL	21.03
95% Standard Bootstrap UCL	18.92	95% Bootstrap-t UCL	1198
95% Hall's Bootstrap UCL	455.8	95% Percentile Bootstrap UCL	21.9
95% BCA Bootstrap UCL	28.15		
90% Chebyshev(Mean, Sd) UCL	28.07	95% Chebyshev(Mean, Sd) UCL	36.45
97.5% Chebyshev(Mean, Sd) UCL	48.09	99% Chebyshev(Mean, Sd) UCL	70.95

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	36.45

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.1	Mean	32.65
Maximum	111	Median	8.54
SD	44.16	Std. Error of Mean	14.72
Coefficient of Variation	1.353	Skewness	1.431
Mean of logged Data	2.587	SD of logged Data	1.466

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	60.02	95% Adjusted-CLT UCL (Chen-1995)	64.36
		95% Modified-t UCL (Johnson-1978)	61.19

Nonparametric Distribution Free UCLs

95% CLT UCL	56.86	95% Jackknife UCL	60.02
95% Standard Bootstrap UCL	55.45	95% Bootstrap-t UCL	130
95% Hall's Bootstrap UCL	158.2	95% Percentile Bootstrap UCL	55.93
95% BCA Bootstrap UCL	63.84		
90% Chebyshev(Mean, Sd) UCL	76.81	95% Chebyshev(Mean, Sd) UCL	96.81
97.5% Chebyshev(Mean, Sd) UCL	124.6	99% Chebyshev(Mean, Sd) UCL	179.1

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.21	Mean	7.811
Maximum	57.3	Median	1.305
SD	18.58	Std. Error of Mean	6.194
Coefficient of Variation	2.379	Skewness	2.986
Mean of logged Data	0.795	SD of logged Data	1.279

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.33	95% Adjusted-CLT UCL (Chen-1995)	24.59
		95% Modified-t UCL (Johnson-1978)	20.36

Nonparametric Distribution Free UCLs

95% CLT UCL	18	95% Jackknife UCL	19.33
95% Standard Bootstrap UCL	17.33	95% Bootstrap-t UCL	2932
95% Hall's Bootstrap UCL	1010	95% Percentile Bootstrap UCL	19.96
95% BCA Bootstrap UCL	26.19		
90% Chebyshev(Mean, Sd) UCL	26.39	95% Chebyshev(Mean, Sd) UCL	34.81
97.5% Chebyshev(Mean, Sd) UCL	46.49	99% Chebyshev(Mean, Sd) UCL	69.44

Suggested UCL to Use

95% Hall's Bootstrap UCL	1010

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.075	Mean	10.49
Maximum	39.1	Median	3.305
SD	12.44	Std. Error of Mean	4.148
Coefficient of Variation	1.186	Skewness	1.844
Mean of logged Data	1.844	SD of logged Data	0.997

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.21	95% Adjusted-CLT UCL (Chen-1995)	20.04
		95% Modified-t UCL (Johnson-1978)	18.63

Nonparametric Distribution Free UCLs

95% CLT UCL	17.32	95% Jackknife UCL	18.21
95% Standard Bootstrap UCL	16.81	95% Bootstrap-t UCL	27.92
95% Hall's Bootstrap UCL	22.93	95% Percentile Bootstrap UCL	17.7
95% BCA Bootstrap UCL	19.78		
90% Chebyshev(Mean, Sd) UCL	22.94	95% Chebyshev(Mean, Sd) UCL	28.57
97.5% Chebyshev(Mean, Sd) UCL	36.4	99% Chebyshev(Mean, Sd) UCL	51.77

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	28.57

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.911	Mean	7.691
Maximum	52.4	Median	1.2
SD	16.83	Std. Error of Mean	5.61
Coefficient of Variation	2.188	Skewness	2.957
Mean of logged Data	0.907	SD of logged Data	1.309

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.12	95% Adjusted-CLT UCL (Chen-1995)	22.83
		95% Modified-t UCL (Johnson-1978)	19.05

Nonparametric Distribution Free UCLs

95% CLT UCL	16.92	95% Jackknife UCL	18.12
95% Standard Bootstrap UCL	16.45	95% Bootstrap-t UCL	94.22
95% Hall's Bootstrap UCL	80.59	95% Percentile Bootstrap UCL	18.58
95% BCA Bootstrap UCL	24.6		
90% Chebyshev(Mean, Sd) UCL	24.52	95% Chebyshev(Mean, Sd) UCL	32.15
97.5% Chebyshev(Mean, Sd) UCL	42.73	99% Chebyshev(Mean, Sd) UCL	63.51

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.23	Mean	22.88
Maximum	83.2	Median	4.545
SD	33.88	Std. Error of Mean	11.29
Coefficient of Variation	1.481	Skewness	1.545
Mean of logged Data	2.207	SD of logged Data	1.352

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.88	95% Adjusted-CLT UCL (Chen-1995)	47.67
		95% Modified-t UCL (Johnson-1978)	44.85

Nonparametric Distribution Free UCLs

95% CLT UCL	41.45	95% Jackknife UCL	43.88
95% Standard Bootstrap UCL	40.12	95% Bootstrap-t UCL	145.5
95% Hall's Bootstrap UCL	220.6	95% Percentile Bootstrap UCL	40.55
95% BCA Bootstrap UCL	48.8		
90% Chebyshev(Mean, Sd) UCL	56.76	95% Chebyshev(Mean, Sd) UCL	72.1
97.5% Chebyshev(Mean, Sd) UCL	93.4	99% Chebyshev(Mean, Sd) UCL	135.2

Suggested UCL to Use

95% Hall's Bootstrap UCL	220.6

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.23	Mean	20.59
Maximum	84.8	Median	8.15
SD	26.34	Std. Error of Mean	8.781
Coefficient of Variation	1.279	Skewness	2.188
Mean of logged Data	2.449	SD of logged Data	1.095

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.92	95% Adjusted-CLT UCL (Chen-1995)	41.88
		95% Modified-t UCL (Johnson-1978)	37.99

Nonparametric Distribution Free UCLs

95% CLT UCL	35.04	95% Jackknife UCL	36.92
95% Standard Bootstrap UCL	33.88	95% Bootstrap-t UCL	60.02
95% Hall's Bootstrap UCL	78.63	95% Percentile Bootstrap UCL	35.19
95% BCA Bootstrap UCL	41.7		
90% Chebyshev(Mean, Sd) UCL	46.94	95% Chebyshev(Mean, Sd) UCL	58.87
97.5% Chebyshev(Mean, Sd) UCL	75.43	99% Chebyshev(Mean, Sd) UCL	108

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 9:00:17 AM
From File	21078N_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.355	Mean	11.68
Maximum	14.8	Median	13.4
SD	3.755	Std. Error of Mean	1.252
Coefficient of Variation	0.321	Skewness	-2.284
Mean of logged Data	2.36	SD of logged Data	0.574

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.01	95% Adjusted-CLT UCL (Chen-1995)	12.72
		95% Modified-t UCL (Johnson-1978)	13.85

Nonparametric Distribution Free UCLs

95% CLT UCL	13.74	95% Jackknife UCL	14.01
95% Standard Bootstrap UCL	13.58	95% Bootstrap-t UCL	13.33
95% Hall's Bootstrap UCL	13.02	95% Percentile Bootstrap UCL	13.37
95% BCA Bootstrap UCL	13.08		
90% Chebyshev(Mean, Sd) UCL	15.44	95% Chebyshev(Mean, Sd) UCL	17.14
97.5% Chebyshev(Mean, Sd) UCL	19.5	99% Chebyshev(Mean, Sd) UCL	24.14

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.14

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.76	Mean	43.63
Maximum	153	Median	15.7

SD	55.67	Std. Error of Mean	18.56
Coefficient of Variation	1.276	Skewness	1.616
Mean of logged Data	3.19	SD of logged Data	1.056

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	78.14	95% Adjusted-CLT UCL (Chen-1995)	84.83
		95% Modified-t UCL (Johnson-1978)	79.8

Nonparametric Distribution Free UCLs

95% CLT UCL	74.15	95% Jackknife UCL	78.14
95% Standard Bootstrap UCL	73	95% Bootstrap-t UCL	271
95% Hall's Bootstrap UCL	320.3	95% Percentile Bootstrap UCL	74.82
95% BCA Bootstrap UCL	80.97		
90% Chebyshev(Mean, Sd) UCL	99.3	95% Chebyshev(Mean, Sd) UCL	124.5
97.5% Chebyshev(Mean, Sd) UCL	159.5	99% Chebyshev(Mean, Sd) UCL	228.3

Suggested UCL to Use

95% Hall's Bootstrap UCL 320.3

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.1	Mean	41.17
Maximum	51.2	Median	45.2
SD	12.12	Std. Error of Mean	4.041
Coefficient of Variation	0.294	Skewness	-2.562
Mean of logged Data	3.639	SD of logged Data	0.503

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.68	95% Adjusted-CLT UCL (Chen-1995)	44.13
		95% Modified-t UCL (Johnson-1978)	48.11

Nonparametric Distribution Free UCLs

95% CLT UCL	47.81	95% Jackknife UCL	48.68

95% Standard Bootstrap UCL	47.65	95% Bootstrap-t UCL	46.58
95% Hall's Bootstrap UCL	45.21	95% Percentile Bootstrap UCL	46.26
95% BCA Bootstrap UCL	45.67		
90% Chebyshev(Mean, Sd) UCL	53.29	95% Chebyshev(Mean, Sd) UCL	58.78
97.5% Chebyshev(Mean, Sd) UCL	66.4	99% Chebyshev(Mean, Sd) UCL	81.37

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	58.78

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.597	Mean	0.816
Maximum	1.13	Median	0.694
SD	0.196	Std. Error of Mean	0.0655
Coefficient of Variation	0.241	Skewness	0.43
Mean of logged Data	-0.229	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.938	95% Adjusted-CLT UCL (Chen-1995)	0.933
		95% Modified-t UCL (Johnson-1978)	0.939

Nonparametric Distribution Free UCLs

95% CLT UCL	0.923	95% Jackknife UCL	0.938
95% Standard Bootstrap UCL	0.917	95% Bootstrap-t UCL	0.946
95% Hall's Bootstrap UCL	0.903	95% Percentile Bootstrap UCL	0.912
95% BCA Bootstrap UCL	0.932		
90% Chebyshev(Mean, Sd) UCL	1.012	95% Chebyshev(Mean, Sd) UCL	1.101
97.5% Chebyshev(Mean, Sd) UCL	1.225	99% Chebyshev(Mean, Sd) UCL	1.467

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.343	Mean	0.496
Maximum	0.665	Median	0.515
SD	0.0849	Std. Error of Mean	0.0283
Coefficient of Variation	0.171	Skewness	0.291
Mean of logged Data	-0.715	SD of logged Data	0.175

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.549	95% Adjusted-CLT UCL (Chen-1995)	0.545
		95% Modified-t UCL (Johnson-1978)	0.549

Nonparametric Distribution Free UCLs

95% CLT UCL	0.542	95% Jackknife UCL	0.549
95% Standard Bootstrap UCL	0.54	95% Bootstrap-t UCL	0.549
95% Hall's Bootstrap UCL	0.566	95% Percentile Bootstrap UCL	0.54
95% BCA Bootstrap UCL	0.543		
90% Chebyshev(Mean, Sd) UCL	0.581	95% Chebyshev(Mean, Sd) UCL	0.619
97.5% Chebyshev(Mean, Sd) UCL	0.673	99% Chebyshev(Mean, Sd) UCL	0.778

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.9	Mean	2.055
Maximum	2.115	Median	2.085
SD	0.0719	Std. Error of Mean	0.024
Coefficient of Variation	0.035	Skewness	-1.67
Mean of logged Data	0.72	SD of logged Data	0.0359

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.1	95% Adjusted-CLT UCL (Chen-1995)	2.08
		95% Modified-t UCL (Johnson-1978)	2.097

Nonparametric Distribution Free UCLs

95% CLT UCL	2.094	95% Jackknife UCL	2.1
95% Standard Bootstrap UCL	2.092	95% Bootstrap-t UCL	2.088
95% Hall's Bootstrap UCL	2.083	95% Percentile Bootstrap UCL	2.088
95% BCA Bootstrap UCL	2.086		
90% Chebyshev(Mean, Sd) UCL	2.127	95% Chebyshev(Mean, Sd) UCL	2.16
97.5% Chebyshev(Mean, Sd) UCL	2.205	99% Chebyshev(Mean, Sd) UCL	2.294

Suggested UCL to Use

95% Student's-t UCL	2.1	or 95% Modified-t UCL	2.097

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.97	Mean	5.724
Maximum	14.6	Median	2.94
SD	5.076	Std. Error of Mean	1.692
Coefficient of Variation	0.887	Skewness	0.985
Mean of logged Data	1.41	SD of logged Data	0.841

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.871	95% Adjusted-CLT UCL (Chen-1995)	9.101
		95% Modified-t UCL (Johnson-1978)	8.963

Nonparametric Distribution Free UCLs

95% CLT UCL	8.508	95% Jackknife UCL	8.871
95% Standard Bootstrap UCL	8.32	95% Bootstrap-t UCL	10.07
95% Hall's Bootstrap UCL	7.536	95% Percentile Bootstrap UCL	8.485
95% BCA Bootstrap UCL	8.693		
90% Chebyshev(Mean, Sd) UCL	10.8	95% Chebyshev(Mean, Sd) UCL	13.1
97.5% Chebyshev(Mean, Sd) UCL	16.29	99% Chebyshev(Mean, Sd) UCL	22.56

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.87	Mean	6.634
Maximum	15.4	Median	3.75
SD	6.014	Std. Error of Mean	2.005
Coefficient of Variation	0.906	Skewness	0.816
Mean of logged Data	1.513	SD of logged Data	0.914

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.36	95% Adjusted-CLT UCL (Chen-1995)	10.51
		95% Modified-t UCL (Johnson-1978)	10.45

Nonparametric Distribution Free UCLs

95% CLT UCL	9.932	95% Jackknife UCL	10.36
95% Standard Bootstrap UCL	9.768	95% Bootstrap-t UCL	10.95
95% Hall's Bootstrap UCL	8.735	95% Percentile Bootstrap UCL	9.627
95% BCA Bootstrap UCL	10.18		
90% Chebyshev(Mean, Sd) UCL	12.65	95% Chebyshev(Mean, Sd) UCL	15.37
97.5% Chebyshev(Mean, Sd) UCL	19.15	99% Chebyshev(Mean, Sd) UCL	26.58

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.49	Mean	9.266
Maximum	22.3	Median	5.26
SD	8.247	Std. Error of Mean	2.749
Coefficient of Variation	0.89	Skewness	0.857
Mean of logged Data	1.869	SD of logged Data	0.885

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.38	95% Adjusted-CLT UCL (Chen-1995)	14.63
		95% Modified-t UCL (Johnson-1978)	14.51

Nonparametric Distribution Free UCLs

95% CLT UCL	13.79	95% Jackknife UCL	14.38

95% Standard Bootstrap UCL	13.59	95% Bootstrap-t UCL	15.53
95% Hall's Bootstrap UCL	12.14	95% Percentile Bootstrap UCL	13.9
95% BCA Bootstrap UCL	14.39		
90% Chebyshev(Mean, Sd) UCL	17.51	95% Chebyshev(Mean, Sd) UCL	21.25
97.5% Chebyshev(Mean, Sd) UCL	26.43	99% Chebyshev(Mean, Sd) UCL	36.62

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.56	Mean	5.315
Maximum	10.3	Median	3.23
SD	3.454	Std. Error of Mean	1.151
Coefficient of Variation	0.65	Skewness	0.881
Mean of logged Data	1.5	SD of logged Data	0.598

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.456	95% Adjusted-CLT UCL (Chen-1995)	7.57
		95% Modified-t UCL (Johnson-1978)	7.512

Nonparametric Distribution Free UCLs

95% CLT UCL	7.209	95% Jackknife UCL	7.456
95% Standard Bootstrap UCL	7.09	95% Bootstrap-t UCL	8.016
95% Hall's Bootstrap UCL	6.459	95% Percentile Bootstrap UCL	7.084
95% BCA Bootstrap UCL	7.099		
90% Chebyshev(Mean, Sd) UCL	8.769	95% Chebyshev(Mean, Sd) UCL	10.33
97.5% Chebyshev(Mean, Sd) UCL	12.51	99% Chebyshev(Mean, Sd) UCL	16.77

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.33

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	1.97	Mean	4.408
Maximum	9.75	Median	2.16
SD	3.442	Std. Error of Mean	1.147
Coefficient of Variation	0.781	Skewness	0.903
Mean of logged Data	1.233	SD of logged Data	0.721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.541	95% Adjusted-CLT UCL (Chen-1995)	6.664
		95% Modified-t UCL (Johnson-1978)	6.599

Nonparametric Distribution Free UCLs

95% CLT UCL	6.295	95% Jackknife UCL	6.541
95% Standard Bootstrap UCL	6.132	95% Bootstrap-t UCL	7.1
95% Hall's Bootstrap UCL	5.52	95% Percentile Bootstrap UCL	6.172
95% BCA Bootstrap UCL	6.594		
90% Chebyshev(Mean, Sd) UCL	7.85	95% Chebyshev(Mean, Sd) UCL	9.409
97.5% Chebyshev(Mean, Sd) UCL	11.57	99% Chebyshev(Mean, Sd) UCL	15.82

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.409

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.92	Mean	7.206
Maximum	17.8	Median	3.89
SD	6.809	Std. Error of Mean	2.27
Coefficient of Variation	0.945	Skewness	0.847
Mean of logged Data	1.558	SD of logged Data	0.959

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.43	95% Adjusted-CLT UCL (Chen-1995)	11.62
		95% Modified-t UCL (Johnson-1978)	11.53

Nonparametric Distribution Free UCLs

95% CLT UCL	10.94	95% Jackknife UCL	11.43
95% Standard Bootstrap UCL	10.76	95% Bootstrap-t UCL	12.36
95% Hall's Bootstrap UCL	9.584	95% Percentile Bootstrap UCL	10.62

95% BCA Bootstrap UCL	11.21		
90% Chebyshev(Mean, Sd) UCL	14.01	95% Chebyshev(Mean, Sd) UCL	17.1
97.5% Chebyshev(Mean, Sd) UCL	21.38	99% Chebyshev(Mean, Sd) UCL	29.79

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.66	Mean	3.132
Maximum	3.25	Median	3.205
SD	0.188	Std. Error of Mean	0.0628
Coefficient of Variation	0.0602	Skewness	-2.438
Mean of logged Data	1.14	SD of logged Data	0.064

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.249	95% Adjusted-CLT UCL (Chen-1995)	3.181
		95% Modified-t UCL (Johnson-1978)	3.241

Nonparametric Distribution Free UCLs

95% CLT UCL	3.236	95% Jackknife UCL	3.249
95% Standard Bootstrap UCL	3.232	95% Bootstrap-t UCL	3.214
95% Hall's Bootstrap UCL	3.196	95% Percentile Bootstrap UCL	3.216
95% BCA Bootstrap UCL	3.199		
90% Chebyshev(Mean, Sd) UCL	3.321	95% Chebyshev(Mean, Sd) UCL	3.406
97.5% Chebyshev(Mean, Sd) UCL	3.525	99% Chebyshev(Mean, Sd) UCL	3.757

Suggested UCL to Use

95% Student's-t UCL	3.249	or 95% Modified-t UCL	3.241

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	10.01

Maximum	28.6	Median	5.47
SD	10.11	Std. Error of Mean	3.371
Coefficient of Variation	1.01	Skewness	1.043
Mean of logged Data	1.822	SD of logged Data	1.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.28	95% Adjusted-CLT UCL (Chen-1995)	16.81
		95% Modified-t UCL (Johnson-1978)	16.47

Nonparametric Distribution Free UCLs

95% CLT UCL	15.55	95% Jackknife UCL	16.28
95% Standard Bootstrap UCL	15.23	95% Bootstrap-t UCL	19.11
95% Hall's Bootstrap UCL	14.27	95% Percentile Bootstrap UCL	15.45
95% BCA Bootstrap UCL	15.97		
90% Chebyshev(Mean, Sd) UCL	20.12	95% Chebyshev(Mean, Sd) UCL	24.7
97.5% Chebyshev(Mean, Sd) UCL	31.06	99% Chebyshev(Mean, Sd) UCL	43.55

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.21	Mean	1.278
Maximum	1.3	Median	1.29
SD	0.0269	Std. Error of Mean	0.00898
Coefficient of Variation	0.0211	Skewness	-2.493
Mean of logged Data	0.245	SD of logged Data	0.0215

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.295	95% Adjusted-CLT UCL (Chen-1995)	1.285
		95% Modified-t UCL (Johnson-1978)	1.294

Nonparametric Distribution Free UCLs

95% CLT UCL	1.293	95% Jackknife UCL	1.295
95% Standard Bootstrap UCL	1.292	95% Bootstrap-t UCL	1.29
95% Hall's Bootstrap UCL	1.287	95% Percentile Bootstrap UCL	1.289
95% BCA Bootstrap UCL	1.288		

90% Chebyshev(Mean, Sd) UCL	1.305	95% Chebyshev(Mean, Sd) UCL	1.317
97.5% Chebyshev(Mean, Sd) UCL	1.334	99% Chebyshev(Mean, Sd) UCL	1.368

Suggested UCL to Use

95% Student's-t UCL	1.295	or 95% Modified-t UCL	1.294

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.92	Mean	5.806
Maximum	11.8	Median	3.25
SD	3.993	Std. Error of Mean	1.331
Coefficient of Variation	0.688	Skewness	0.893
Mean of logged Data	1.568	SD of logged Data	0.63

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.281	95% Adjusted-CLT UCL (Chen-1995)	8.419
		95% Modified-t UCL (Johnson-1978)	8.347

Nonparametric Distribution Free UCLs

95% CLT UCL	7.996	95% Jackknife UCL	8.281
95% Standard Bootstrap UCL	7.863	95% Bootstrap-t UCL	8.959
95% Hall's Bootstrap UCL	7.096	95% Percentile Bootstrap UCL	7.855
95% BCA Bootstrap UCL	8.433		
90% Chebyshev(Mean, Sd) UCL	9.799	95% Chebyshev(Mean, Sd) UCL	11.61
97.5% Chebyshev(Mean, Sd) UCL	14.12	99% Chebyshev(Mean, Sd) UCL	19.05

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.61

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.24	Mean	1.758
Maximum	2.46	Median	1.51

SD	0.448	Std. Error of Mean	0.149
Coefficient of Variation	0.255	Skewness	0.406
Mean of logged Data	0.536	SD of logged Data	0.252

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.036	95% Adjusted-CLT UCL (Chen-1995)	2.025
		95% Modified-t UCL (Johnson-1978)	2.039

Nonparametric Distribution Free UCLs

95% CLT UCL	2.003	95% Jackknife UCL	2.036
95% Standard Bootstrap UCL	1.989	95% Bootstrap-t UCL	2.079
95% Hall's Bootstrap UCL	1.957	95% Percentile Bootstrap UCL	1.986
95% BCA Bootstrap UCL	1.997		
90% Chebyshev(Mean, Sd) UCL	2.206	95% Chebyshev(Mean, Sd) UCL	2.409
97.5% Chebyshev(Mean, Sd) UCL	2.691	99% Chebyshev(Mean, Sd) UCL	3.244

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.39	Mean	5.532
Maximum	17.4	Median	3.225
SD	4.841	Std. Error of Mean	1.614
Coefficient of Variation	0.875	Skewness	2.246
Mean of logged Data	1.481	SD of logged Data	0.651

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.532	95% Adjusted-CLT UCL (Chen-1995)	9.477
		95% Modified-t UCL (Johnson-1978)	8.733

Nonparametric Distribution Free UCLs

95% CLT UCL	8.186	95% Jackknife UCL	8.532
95% Standard Bootstrap UCL	8.066	95% Bootstrap-t UCL	14.39
95% Hall's Bootstrap UCL	16.85	95% Percentile Bootstrap UCL	8.314
95% BCA Bootstrap UCL	9.455		
90% Chebyshev(Mean, Sd) UCL	10.37	95% Chebyshev(Mean, Sd) UCL	12.56

97.5% Chebyshev(Mean, Sd) UCL	15.61	99% Chebyshev(Mean, Sd) UCL	21.59

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.56

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.4	Mean	9.674
Maximum	25.6	Median	5.15
SD	9.251	Std. Error of Mean	3.084
Coefficient of Variation	0.956	Skewness	0.953
Mean of logged Data	1.853	SD of logged Data	0.957

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.41	95% Adjusted-CLT UCL (Chen-1995)	15.79
		95% Modified-t UCL (Johnson-1978)	15.57

Nonparametric Distribution Free UCLs

95% CLT UCL	14.75	95% Jackknife UCL	15.41
95% Standard Bootstrap UCL	14.46	95% Bootstrap-t UCL	17.26
95% Hall's Bootstrap UCL	13.12	95% Percentile Bootstrap UCL	14.73
95% BCA Bootstrap UCL	15.45		
90% Chebyshev(Mean, Sd) UCL	18.93	95% Chebyshev(Mean, Sd) UCL	23.12
97.5% Chebyshev(Mean, Sd) UCL	28.93	99% Chebyshev(Mean, Sd) UCL	40.36

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:20:59 PM
From File	38002A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	7.92	Mean	9.447
Maximum	11	Median	9.17
SD	0.91	Std. Error of Mean	0.303
Coefficient of Variation	0.0964	Skewness	0.325
Mean of logged Data	2.242	SD of logged Data	0.0961

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.01	95% Adjusted-CLT UCL (Chen-1995)	9.981
		95% Modified-t UCL (Johnson-1978)	10.02

Nonparametric Distribution Free UCLs

95% CLT UCL	9.946	95% Jackknife UCL	10.01
95% Standard Bootstrap UCL	9.912	95% Bootstrap-t UCL	10.15
95% Hall's Bootstrap UCL	10.41	95% Percentile Bootstrap UCL	9.941
95% BCA Bootstrap UCL	9.939		
90% Chebyshev(Mean, Sd) UCL	10.36	95% Chebyshev(Mean, Sd) UCL	10.77
97.5% Chebyshev(Mean, Sd) UCL	11.34	99% Chebyshev(Mean, Sd) UCL	12.47

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.12	Mean	13.06
Maximum	38.5	Median	10.1
SD	9.627	Std. Error of Mean	3.209
Coefficient of Variation	0.737	Skewness	2.898
Mean of logged Data	2.434	SD of logged Data	0.474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.03	95% Adjusted-CLT UCL (Chen-1995)	21.65
		95% Modified-t UCL (Johnson-1978)	19.55

Nonparametric Distribution Free UCLs

95% CLT UCL	18.34	95% Jackknife UCL	19.03
95% Standard Bootstrap UCL	18.03	95% Bootstrap-t UCL	51.92
95% Hall's Bootstrap UCL	47.7	95% Percentile Bootstrap UCL	19.22
95% BCA Bootstrap UCL	22.41		
90% Chebyshev(Mean, Sd) UCL	22.69	95% Chebyshev(Mean, Sd) UCL	27.05
97.5% Chebyshev(Mean, Sd) UCL	33.1	99% Chebyshev(Mean, Sd) UCL	44.99

Suggested UCL to Use

95% Student's-t UCL	19.03	or 95% Modified-t UCL	19.55

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	32.9	Mean	37.14
Maximum	44.3	Median	36.5
SD	3.305	Std. Error of Mean	1.102
Coefficient of Variation	0.089	Skewness	1.312
Mean of logged Data	3.611	SD of logged Data	0.0857

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.19	95% Adjusted-CLT UCL (Chen-1995)	39.47
		95% Modified-t UCL (Johnson-1978)	39.27

Nonparametric Distribution Free UCLs

95% CLT UCL	38.96	95% Jackknife UCL	39.19
95% Standard Bootstrap UCL	38.83	95% Bootstrap-t UCL	40.67
95% Hall's Bootstrap UCL	51.42	95% Percentile Bootstrap UCL	38.94
95% BCA Bootstrap UCL	39.27		
90% Chebyshev(Mean, Sd) UCL	40.45	95% Chebyshev(Mean, Sd) UCL	41.95
97.5% Chebyshev(Mean, Sd) UCL	44.02	99% Chebyshev(Mean, Sd) UCL	48.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.808	Mean	0.934
Maximum	0.995	Median	0.97
SD	0.0721	Std. Error of Mean	0.024
Coefficient of Variation	0.0772	Skewness	-1.305
Mean of logged Data	-0.0713	SD of logged Data	0.0806

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.978	95% Adjusted-CLT UCL (Chen-1995)	0.962
		95% Modified-t UCL (Johnson-1978)	0.977

Nonparametric Distribution Free UCLs

95% CLT UCL	0.973	95% Jackknife UCL	0.978
95% Standard Bootstrap UCL	0.971	95% Bootstrap-t UCL	0.97
95% Hall's Bootstrap UCL	0.962	95% Percentile Bootstrap UCL	0.969
95% BCA Bootstrap UCL	0.963		
90% Chebyshev(Mean, Sd) UCL	1.006	95% Chebyshev(Mean, Sd) UCL	1.038
97.5% Chebyshev(Mean, Sd) UCL	1.084	99% Chebyshev(Mean, Sd) UCL	1.173

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.492	Mean	0.513
Maximum	0.53	Median	0.515
SD	0.0135	Std. Error of Mean	0.00451
Coefficient of Variation	0.0264	Skewness	-0.638
Mean of logged Data	-0.668	SD of logged Data	0.0266

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.521	95% Adjusted-CLT UCL (Chen-1995)	0.519
		95% Modified-t UCL (Johnson-1978)	0.521

Nonparametric Distribution Free UCLs

95% CLT UCL	0.52	95% Jackknife UCL	0.521
95% Standard Bootstrap UCL	0.52	95% Bootstrap-t UCL	0.52
95% Hall's Bootstrap UCL	0.519	95% Percentile Bootstrap UCL	0.519
95% BCA Bootstrap UCL	0.519		
90% Chebyshev(Mean, Sd) UCL	0.526	95% Chebyshev(Mean, Sd) UCL	0.532
97.5% Chebyshev(Mean, Sd) UCL	0.541	99% Chebyshev(Mean, Sd) UCL	0.558

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2	Mean	2.087
Maximum	2.155	Median	2.1
SD	0.0561	Std. Error of Mean	0.0187
Coefficient of Variation	0.0269	Skewness	-0.765
Mean of logged Data	0.736	SD of logged Data	0.0271

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.122	95% Adjusted-CLT UCL (Chen-1995)	2.113
		95% Modified-t UCL (Johnson-1978)	2.121

Nonparametric Distribution Free UCLs

95% CLT UCL	2.118	95% Jackknife UCL	2.122
95% Standard Bootstrap UCL	2.116	95% Bootstrap-t UCL	2.116
95% Hall's Bootstrap UCL	2.112	95% Percentile Bootstrap UCL	2.117
95% BCA Bootstrap UCL	2.112		
90% Chebyshev(Mean, Sd) UCL	2.143	95% Chebyshev(Mean, Sd) UCL	2.169
97.5% Chebyshev(Mean, Sd) UCL	2.204	99% Chebyshev(Mean, Sd) UCL	2.273

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2	Mean	2.194
Maximum	2.53	Median	2.14
SD	0.191	Std. Error of Mean	0.0635
Coefficient of Variation	0.0869	Skewness	1.338
Mean of logged Data	0.783	SD of logged Data	0.0834

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.313	95% Adjusted-CLT UCL (Chen-1995)	2.329
		95% Modified-t UCL (Johnson-1978)	2.317

Nonparametric Distribution Free UCLs

95% CLT UCL	2.299	95% Jackknife UCL	2.313
95% Standard Bootstrap UCL	2.291	95% Bootstrap-t UCL	2.547
95% Hall's Bootstrap UCL	3.258	95% Percentile Bootstrap UCL	2.299
95% BCA Bootstrap UCL	2.31		
90% Chebyshev(Mean, Sd) UCL	2.385	95% Chebyshev(Mean, Sd) UCL	2.471
97.5% Chebyshev(Mean, Sd) UCL	2.591	99% Chebyshev(Mean, Sd) UCL	2.827

Suggested UCL to Use

95% Student's-t UCL	2.313	or 95% Modified-t UCL	2.317

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	2.669
Maximum	4.01	Median	2.14
SD	0.866	Std. Error of Mean	0.289
Coefficient of Variation	0.325	Skewness	0.884
Mean of logged Data	0.939	SD of logged Data	0.301

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.206	95% Adjusted-CLT UCL (Chen-1995)	3.235
		95% Modified-t UCL (Johnson-1978)	3.22

Nonparametric Distribution Free UCLs

95% CLT UCL	3.144	95% Jackknife UCL	3.206
95% Standard Bootstrap UCL	3.12	95% Bootstrap-t UCL	3.309
95% Hall's Bootstrap UCL	2.95	95% Percentile Bootstrap UCL	3.173
95% BCA Bootstrap UCL	3.239		
90% Chebyshev(Mean, Sd) UCL	3.535	95% Chebyshev(Mean, Sd) UCL	3.927
97.5% Chebyshev(Mean, Sd) UCL	4.472	99% Chebyshev(Mean, Sd) UCL	5.541

Suggested UCL to Use

95% Student's-t UCL	3.206	or 95% Modified-t UCL	3.22

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.075	Mean	3.927
Maximum	6.08	Median	3.29
SD	1.108	Std. Error of Mean	0.369
Coefficient of Variation	0.282	Skewness	1.187
Mean of logged Data	1.336	SD of logged Data	0.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.613	95% Adjusted-CLT UCL (Chen-1995)	4.69
		95% Modified-t UCL (Johnson-1978)	4.638

Nonparametric Distribution Free UCLs

95% CLT UCL	4.534	95% Jackknife UCL	4.613
95% Standard Bootstrap UCL	4.495	95% Bootstrap-t UCL	4.914
95% Hall's Bootstrap UCL	4.358	95% Percentile Bootstrap UCL	4.508
95% BCA Bootstrap UCL	4.574		
90% Chebyshev(Mean, Sd) UCL	5.034	95% Chebyshev(Mean, Sd) UCL	5.536
97.5% Chebyshev(Mean, Sd) UCL	6.232	99% Chebyshev(Mean, Sd) UCL	7.6

Suggested UCL to Use

95% Student's-t UCL	4.613	or 95% Modified-t UCL	4.638

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.36	Mean	3.008
Maximum	3.315	Median	3.165
SD	0.355	Std. Error of Mean	0.118
Coefficient of Variation	0.118	Skewness	-1.162
Mean of logged Data	1.094	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.228	95% Adjusted-CLT UCL (Chen-1995)	3.153
		95% Modified-t UCL (Johnson-1978)	3.22

Nonparametric Distribution Free UCLs

95% CLT UCL	3.202	95% Jackknife UCL	3.228
95% Standard Bootstrap UCL	3.187	95% Bootstrap-t UCL	3.189
95% Hall's Bootstrap UCL	3.151	95% Percentile Bootstrap UCL	3.185
95% BCA Bootstrap UCL	3.167		
90% Chebyshev(Mean, Sd) UCL	3.363	95% Chebyshev(Mean, Sd) UCL	3.523
97.5% Chebyshev(Mean, Sd) UCL	3.747	99% Chebyshev(Mean, Sd) UCL	4.185

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	2.104
Maximum	2.29	Median	2.1
SD	0.0898	Std. Error of Mean	0.0299
Coefficient of Variation	0.0427	Skewness	0.85
Mean of logged Data	0.743	SD of logged Data	0.0422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.16	95% Adjusted-CLT UCL (Chen-1995)	2.163
		95% Modified-t UCL (Johnson-1978)	2.162

Nonparametric Distribution Free UCLs

95% CLT UCL	2.154	95% Jackknife UCL	2.16
95% Standard Bootstrap UCL	2.152	95% Bootstrap-t UCL	2.171
95% Hall's Bootstrap UCL	2.194	95% Percentile Bootstrap UCL	2.152
95% BCA Bootstrap UCL	2.162		
90% Chebyshev(Mean, Sd) UCL	2.194	95% Chebyshev(Mean, Sd) UCL	2.235
97.5% Chebyshev(Mean, Sd) UCL	2.291	99% Chebyshev(Mean, Sd) UCL	2.402

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	2.701
Maximum	4.21	Median	2.14
SD	0.922	Std. Error of Mean	0.307
Coefficient of Variation	0.341	Skewness	0.945
Mean of logged Data	0.947	SD of logged Data	0.315

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.273	95% Adjusted-CLT UCL (Chen-1995)	3.31
		95% Modified-t UCL (Johnson-1978)	3.289

Nonparametric Distribution Free UCLs

95% CLT UCL	3.207	95% Jackknife UCL	3.273
95% Standard Bootstrap UCL	3.176	95% Bootstrap-t UCL	3.491
95% Hall's Bootstrap UCL	3.012	95% Percentile Bootstrap UCL	3.192
95% BCA Bootstrap UCL	3.283		
90% Chebyshev(Mean, Sd) UCL	3.623	95% Chebyshev(Mean, Sd) UCL	4.041
97.5% Chebyshev(Mean, Sd) UCL	4.621	99% Chebyshev(Mean, Sd) UCL	5.76

Suggested UCL to Use

95% Student's-t UCL	3.273	or 95% Modified-t UCL	3.289

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.075	Mean	3.21
Maximum	3.315	Median	3.23
SD	0.0871	Std. Error of Mean	0.029
Coefficient of Variation	0.0271	Skewness	-0.764
Mean of logged Data	1.166	SD of logged Data	0.0274

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.264	95% Adjusted-CLT UCL (Chen-1995)	3.25
		95% Modified-t UCL (Johnson-1978)	3.263

Nonparametric Distribution Free UCLs

95% CLT UCL	3.258	95% Jackknife UCL	3.264
95% Standard Bootstrap UCL	3.254	95% Bootstrap-t UCL	3.257
95% Hall's Bootstrap UCL	3.247	95% Percentile Bootstrap UCL	3.253
95% BCA Bootstrap UCL	3.249		
90% Chebyshev(Mean, Sd) UCL	3.297	95% Chebyshev(Mean, Sd) UCL	3.337
97.5% Chebyshev(Mean, Sd) UCL	3.391	99% Chebyshev(Mean, Sd) UCL	3.499

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	2.931
Maximum	4.91	Median	2.14
SD	1.264	Std. Error of Mean	0.421
Coefficient of Variation	0.431	Skewness	0.908
Mean of logged Data	1.001	SD of logged Data	0.395

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.715	95% Adjusted-CLT UCL (Chen-1995)	3.761
		95% Modified-t UCL (Johnson-1978)	3.736

Nonparametric Distribution Free UCLs

95% CLT UCL	3.624	95% Jackknife UCL	3.715
95% Standard Bootstrap UCL	3.596	95% Bootstrap-t UCL	3.947
95% Hall's Bootstrap UCL	3.344	95% Percentile Bootstrap UCL	3.568
95% BCA Bootstrap UCL	3.742		
90% Chebyshev(Mean, Sd) UCL	4.195	95% Chebyshev(Mean, Sd) UCL	4.768
97.5% Chebyshev(Mean, Sd) UCL	5.563	99% Chebyshev(Mean, Sd) UCL	7.124

Suggested UCL to Use

95% Student's-t UCL	3.715	or 95% Modified-t UCL	3.736

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.23	Mean	1.283
Maximum	1.325	Median	1.295
SD	0.0345	Std. Error of Mean	0.0115
Coefficient of Variation	0.0269	Skewness	-0.763
Mean of logged Data	0.249	SD of logged Data	0.0271

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.305	95% Adjusted-CLT UCL (Chen-1995)	1.299
		95% Modified-t UCL (Johnson-1978)	1.304

Nonparametric Distribution Free UCLs

95% CLT UCL	1.302	95% Jackknife UCL	1.305
95% Standard Bootstrap UCL	1.301	95% Bootstrap-t UCL	1.301
95% Hall's Bootstrap UCL	1.298	95% Percentile Bootstrap UCL	1.3
95% BCA Bootstrap UCL	1.299		
90% Chebyshev(Mean, Sd) UCL	1.318	95% Chebyshev(Mean, Sd) UCL	1.333
97.5% Chebyshev(Mean, Sd) UCL	1.355	99% Chebyshev(Mean, Sd) UCL	1.398

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.62	Mean	3.181
Maximum	3.79	Median	3.23
SD	0.32	Std. Error of Mean	0.107
Coefficient of Variation	0.101	Skewness	0.134
Mean of logged Data	1.153	SD of logged Data	0.101

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.379	95% Adjusted-CLT UCL (Chen-1995)	3.362
		95% Modified-t UCL (Johnson-1978)	3.38

Nonparametric Distribution Free UCLs

95% CLT UCL	3.357	95% Jackknife UCL	3.379
95% Standard Bootstrap UCL	3.348	95% Bootstrap-t UCL	3.385
95% Hall's Bootstrap UCL	3.413	95% Percentile Bootstrap UCL	3.356
95% BCA Bootstrap UCL	3.347		
90% Chebyshev(Mean, Sd) UCL	3.501	95% Chebyshev(Mean, Sd) UCL	3.646
97.5% Chebyshev(Mean, Sd) UCL	3.847	99% Chebyshev(Mean, Sd) UCL	4.243

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.97	Mean	1.517
Maximum	2.5	Median	1.17
SD	0.59	Std. Error of Mean	0.197
Coefficient of Variation	0.389	Skewness	0.563
Mean of logged Data	0.351	SD of logged Data	0.381

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.882	95% Adjusted-CLT UCL (Chen-1995)	1.879
		95% Modified-t UCL (Johnson-1978)	1.888

Nonparametric Distribution Free UCLs

95% CLT UCL	1.84	95% Jackknife UCL	1.882
95% Standard Bootstrap UCL	1.826	95% Bootstrap-t UCL	1.943
95% Hall's Bootstrap UCL	1.78	95% Percentile Bootstrap UCL	1.844
95% BCA Bootstrap UCL	1.869		
90% Chebyshev(Mean, Sd) UCL	2.106	95% Chebyshev(Mean, Sd) UCL	2.373
97.5% Chebyshev(Mean, Sd) UCL	2.744	99% Chebyshev(Mean, Sd) UCL	3.472

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.15	Mean	3.006
Maximum	3.315	Median	3.23
SD	0.445	Std. Error of Mean	0.148
Coefficient of Variation	0.148	Skewness	-1.554
Mean of logged Data	1.089	SD of logged Data	0.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.282	95% Adjusted-CLT UCL (Chen-1995)	3.168
		95% Modified-t UCL (Johnson-1978)	3.269

Nonparametric Distribution Free UCLs

95% CLT UCL	3.25	95% Jackknife UCL	3.282
95% Standard Bootstrap UCL	3.248	95% Bootstrap-t UCL	3.219
95% Hall's Bootstrap UCL	3.176	95% Percentile Bootstrap UCL	3.223
95% BCA Bootstrap UCL	3.192		
90% Chebyshev(Mean, Sd) UCL	3.451	95% Chebyshev(Mean, Sd) UCL	3.653
97.5% Chebyshev(Mean, Sd) UCL	3.932	99% Chebyshev(Mean, Sd) UCL	4.482

Suggested UCL to Use

95% Student's-t UCL	3.282	or 95% Modified-t UCL	3.269

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.075	Mean	3.621
Maximum	4.68	Median	3.29
SD	0.614	Std. Error of Mean	0.205
Coefficient of Variation	0.169	Skewness	0.942
Mean of logged Data	1.275	SD of logged Data	0.161

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.001	95% Adjusted-CLT UCL (Chen-1995)	4.026
		95% Modified-t UCL (Johnson-1978)	4.012

Nonparametric Distribution Free UCLs

95% CLT UCL	3.958	95% Jackknife UCL	4.001
95% Standard Bootstrap UCL	3.94	95% Bootstrap-t UCL	4.103
95% Hall's Bootstrap UCL	3.853	95% Percentile Bootstrap UCL	3.954
95% BCA Bootstrap UCL	3.995		
90% Chebyshev(Mean, Sd) UCL	4.235	95% Chebyshev(Mean, Sd) UCL	4.513
97.5% Chebyshev(Mean, Sd) UCL	4.899	99% Chebyshev(Mean, Sd) UCL	5.656

Suggested UCL to Use

95% Student's-t UCL	4.001	or 95% Modified-t UCL	4.012

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:22:08 PM
From File	38002B_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.1	Mean	13.84
Maximum	15.7	Median	14.1
SD	1.512	Std. Error of Mean	0.504
Coefficient of Variation	0.109	Skewness	-0.611
Mean of logged Data	2.622	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.78	95% Adjusted-CLT UCL (Chen-1995)	14.56
		95% Modified-t UCL (Johnson-1978)	14.76

Nonparametric Distribution Free UCLs

95% CLT UCL	14.67	95% Jackknife UCL	14.78
95% Standard Bootstrap UCL	14.61	95% Bootstrap-t UCL	14.69
95% Hall's Bootstrap UCL	14.59	95% Percentile Bootstrap UCL	14.57
95% BCA Bootstrap UCL	14.52		
90% Chebyshev(Mean, Sd) UCL	15.36	95% Chebyshev(Mean, Sd) UCL	16.04
97.5% Chebyshev(Mean, Sd) UCL	16.99	99% Chebyshev(Mean, Sd) UCL	18.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.7	Mean	18.1
Maximum	54.3	Median	13.3
SD	13.65	Std. Error of Mean	4.549
Coefficient of Variation	0.754	Skewness	2.94

Mean of logged Data	2.758	SD of logged Data	0.475

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.56	95% Adjusted-CLT UCL (Chen-1995)	30.35
		95% Modified-t UCL (Johnson-1978)	27.3

Nonparametric Distribution Free UCLs

95% CLT UCL	25.58	95% Jackknife UCL	26.56
95% Standard Bootstrap UCL	25.27	95% Bootstrap-t UCL	80.36
95% Hall's Bootstrap UCL	62.22	95% Percentile Bootstrap UCL	26.66
95% BCA Bootstrap UCL	31.54		
90% Chebyshev(Mean, Sd) UCL	31.75	95% Chebyshev(Mean, Sd) UCL	37.93
97.5% Chebyshev(Mean, Sd) UCL	46.51	99% Chebyshev(Mean, Sd) UCL	63.36

Suggested UCL to Use

95% Student's-t UCL	26.56	or 95% Modified-t UCL	27.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	43.6	Mean	50.17
Maximum	54.6	Median	50.7
SD	3.45	Std. Error of Mean	1.15
Coefficient of Variation	0.0688	Skewness	-0.57
Mean of logged Data	3.913	SD of logged Data	0.0701

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.31	95% Adjusted-CLT UCL (Chen-1995)	51.82
		95% Modified-t UCL (Johnson-1978)	52.27

Nonparametric Distribution Free UCLs

95% CLT UCL	52.06	95% Jackknife UCL	52.31
95% Standard Bootstrap UCL	51.91	95% Bootstrap-t UCL	52.11
95% Hall's Bootstrap UCL	51.88	95% Percentile Bootstrap UCL	51.89
95% BCA Bootstrap UCL	51.74		
90% Chebyshev(Mean, Sd) UCL	53.62	95% Chebyshev(Mean, Sd) UCL	55.18
97.5% Chebyshev(Mean, Sd) UCL	57.35	99% Chebyshev(Mean, Sd) UCL	61.61

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.654	Mean	1.068
Maximum	1.64	Median	0.99
SD	0.276	Std. Error of Mean	0.0919
Coefficient of Variation	0.258	Skewness	1.028
Mean of logged Data	0.0373	SD of logged Data	0.251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.239	95% Adjusted-CLT UCL (Chen-1995)	1.252
		95% Modified-t UCL (Johnson-1978)	1.244

Nonparametric Distribution Free UCLs

95% CLT UCL	1.219	95% Jackknife UCL	1.239
95% Standard Bootstrap UCL	1.21	95% Bootstrap-t UCL	1.349
95% Hall's Bootstrap UCL	2.578	95% Percentile Bootstrap UCL	1.22
95% BCA Bootstrap UCL	1.249		
90% Chebyshev(Mean, Sd) UCL	1.343	95% Chebyshev(Mean, Sd) UCL	1.468
97.5% Chebyshev(Mean, Sd) UCL	1.641	99% Chebyshev(Mean, Sd) UCL	1.982

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.52	Mean	0.619
Maximum	0.939	Median	0.53
SD	0.176	Std. Error of Mean	0.0586
Coefficient of Variation	0.284	Skewness	1.604
Mean of logged Data	-0.509	SD of logged Data	0.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.728	95% Adjusted-CLT UCL (Chen-1995)	0.749
		95% Modified-t UCL (Johnson-1978)	0.734

Nonparametric Distribution Free UCLs

95% CLT UCL	0.716	95% Jackknife UCL	0.728
95% Standard Bootstrap UCL	0.711	95% Bootstrap-t UCL	1.838
95% Hall's Bootstrap UCL	2.358	95% Percentile Bootstrap UCL	0.711
95% BCA Bootstrap UCL	0.748		
90% Chebyshev(Mean, Sd) UCL	0.795	95% Chebyshev(Mean, Sd) UCL	0.875
97.5% Chebyshev(Mean, Sd) UCL	0.985	99% Chebyshev(Mean, Sd) UCL	1.202

Suggested UCL to Use

95% Student's-t UCL	0.728	or 95% Modified-t UCL	0.734

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.54	Mean	2.098
Maximum	2.99	Median	2.13
SD	0.421	Std. Error of Mean	0.14
Coefficient of Variation	0.201	Skewness	0.804
Mean of logged Data	0.723	SD of logged Data	0.198

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.359	95% Adjusted-CLT UCL (Chen-1995)	2.369
		95% Modified-t UCL (Johnson-1978)	2.365

Nonparametric Distribution Free UCLs

95% CLT UCL	2.329	95% Jackknife UCL	2.359
95% Standard Bootstrap UCL	2.319	95% Bootstrap-t UCL	2.396
95% Hall's Bootstrap UCL	2.524	95% Percentile Bootstrap UCL	2.325
95% BCA Bootstrap UCL	2.352		
90% Chebyshev(Mean, Sd) UCL	2.519	95% Chebyshev(Mean, Sd) UCL	2.709
97.5% Chebyshev(Mean, Sd) UCL	2.974	99% Chebyshev(Mean, Sd) UCL	3.494

Suggested UCL to Use

95% Student's-t UCL	2.359	or 95% Modified-t UCL	2.365

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.125	Mean	4.384
Maximum	10.8	Median	2.16
SD	3.377	Std. Error of Mean	1.126
Coefficient of Variation	0.77	Skewness	1.18
Mean of logged Data	1.249	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.478	95% Adjusted-CLT UCL (Chen-1995)	6.709
		95% Modified-t UCL (Johnson-1978)	6.551

Nonparametric Distribution Free UCLs

95% CLT UCL	6.236	95% Jackknife UCL	6.478
95% Standard Bootstrap UCL	6.107	95% Bootstrap-t UCL	8.004
95% Hall's Bootstrap UCL	5.946	95% Percentile Bootstrap UCL	6.31
95% BCA Bootstrap UCL	6.495		
90% Chebyshev(Mean, Sd) UCL	7.761	95% Chebyshev(Mean, Sd) UCL	9.291
97.5% Chebyshev(Mean, Sd) UCL	11.41	99% Chebyshev(Mean, Sd) UCL	15.58

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.291

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.9	Mean	3.105
Maximum	9.87	Median	2.14
SD	2.575	Std. Error of Mean	0.858
Coefficient of Variation	0.829	Skewness	2.845
Mean of logged Data	0.965	SD of logged Data	0.524

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.701	95% Adjusted-CLT UCL (Chen-1995)	5.387
		95% Modified-t UCL (Johnson-1978)	4.837

Nonparametric Distribution Free UCLs

95% CLT UCL	4.517	95% Jackknife UCL	4.701
95% Standard Bootstrap UCL	4.43	95% Bootstrap-t UCL	35.14
95% Hall's Bootstrap UCL	37.99	95% Percentile Bootstrap UCL	4.709
95% BCA Bootstrap UCL	5.568		
90% Chebyshev(Mean, Sd) UCL	5.68	95% Chebyshev(Mean, Sd) UCL	6.846
97.5% Chebyshev(Mean, Sd) UCL	8.465	99% Chebyshev(Mean, Sd) UCL	11.65

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.846

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.56	Mean	6.639
Maximum	14.9	Median	3.32
SD	5.111	Std. Error of Mean	1.704
Coefficient of Variation	0.77	Skewness	0.928
Mean of logged Data	1.646	SD of logged Data	0.723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.807	95% Adjusted-CLT UCL (Chen-1995)	10
		95% Modified-t UCL (Johnson-1978)	9.895

Nonparametric Distribution Free UCLs

95% CLT UCL	9.442	95% Jackknife UCL	9.807
95% Standard Bootstrap UCL	9.32	95% Bootstrap-t UCL	11.06
95% Hall's Bootstrap UCL	8.625	95% Percentile Bootstrap UCL	9.242
95% BCA Bootstrap UCL	9.717		
90% Chebyshev(Mean, Sd) UCL	11.75	95% Chebyshev(Mean, Sd) UCL	14.07
97.5% Chebyshev(Mean, Sd) UCL	17.28	99% Chebyshev(Mean, Sd) UCL	23.59

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.31	Mean	4.346
Maximum	7.55	Median	3.305
SD	1.883	Std. Error of Mean	0.628
Coefficient of Variation	0.433	Skewness	0.863
Mean of logged Data	1.392	SD of logged Data	0.408

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.513	95% Adjusted-CLT UCL (Chen-1995)	5.571
		95% Modified-t UCL (Johnson-1978)	5.543

Nonparametric Distribution Free UCLs

95% CLT UCL	5.378	95% Jackknife UCL	5.513
95% Standard Bootstrap UCL	5.32	95% Bootstrap-t UCL	5.815
95% Hall's Bootstrap UCL	5.176	95% Percentile Bootstrap UCL	5.317
95% BCA Bootstrap UCL	5.604		
90% Chebyshev(Mean, Sd) UCL	6.229	95% Chebyshev(Mean, Sd) UCL	7.082
97.5% Chebyshev(Mean, Sd) UCL	8.265	99% Chebyshev(Mean, Sd) UCL	10.59

Suggested UCL to Use

95% Student's-t UCL	5.513	or 95% Modified-t UCL	5.543

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.1	Mean	3.194
Maximum	5.84	Median	2.145
SD	1.631	Std. Error of Mean	0.544
Coefficient of Variation	0.51	Skewness	1.021
Mean of logged Data	1.06	SD of logged Data	0.459

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.205	95% Adjusted-CLT UCL (Chen-1995)	4.286
		95% Modified-t UCL (Johnson-1978)	4.236

Nonparametric Distribution Free UCLs

95% CLT UCL	4.089	95% Jackknife UCL	4.205
95% Standard Bootstrap UCL	4.035	95% Bootstrap-t UCL	4.836
95% Hall's Bootstrap UCL	3.894	95% Percentile Bootstrap UCL	4.107
95% BCA Bootstrap UCL	4.144		
90% Chebyshev(Mean, Sd) UCL	4.825	95% Chebyshev(Mean, Sd) UCL	5.564
97.5% Chebyshev(Mean, Sd) UCL	6.589	99% Chebyshev(Mean, Sd) UCL	8.603

Suggested UCL to Use

95% Student's-t UCL	4.205	or 95% Modified-t UCL	4.236

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.13	Mean	6.575
Maximum	19.3	Median	3.94
SD	6.291	Std. Error of Mean	2.097
Coefficient of Variation	0.957	Skewness	1.371
Mean of logged Data	1.518	SD of logged Data	0.876

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.47	95% Adjusted-CLT UCL (Chen-1995)	11.05
		95% Modified-t UCL (Johnson-1978)	10.63

Nonparametric Distribution Free UCLs

95% CLT UCL	10.02	95% Jackknife UCL	10.47
95% Standard Bootstrap UCL	9.832	95% Bootstrap-t UCL	14.6
95% Hall's Bootstrap UCL	11.51	95% Percentile Bootstrap UCL	10.17
95% BCA Bootstrap UCL	10.59		
90% Chebyshev(Mean, Sd) UCL	12.87	95% Chebyshev(Mean, Sd) UCL	15.71
97.5% Chebyshev(Mean, Sd) UCL	19.67	99% Chebyshev(Mean, Sd) UCL	27.44

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	3.256
Maximum	3.32	Median	3.27
SD	0.0527	Std. Error of Mean	0.0176
Coefficient of Variation	0.0162	Skewness	-0.863
Mean of logged Data	1.18	SD of logged Data	0.0163

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.289	95% Adjusted-CLT UCL (Chen-1995)	3.28
		95% Modified-t UCL (Johnson-1978)	3.288

Nonparametric Distribution Free UCLs

95% CLT UCL	3.285	95% Jackknife UCL	3.289
95% Standard Bootstrap UCL	3.283	95% Bootstrap-t UCL	3.284
95% Hall's Bootstrap UCL	3.28	95% Percentile Bootstrap UCL	3.283
95% BCA Bootstrap UCL	3.281		
90% Chebyshev(Mean, Sd) UCL	3.309	95% Chebyshev(Mean, Sd) UCL	3.333
97.5% Chebyshev(Mean, Sd) UCL	3.366	99% Chebyshev(Mean, Sd) UCL	3.431

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	8.738
Maximum	18.6	Median	4.78
SD	6.986	Std. Error of Mean	2.329
Coefficient of Variation	0.799	Skewness	0.367
Mean of logged Data	1.802	SD of logged Data	0.956

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.07	95% Adjusted-CLT UCL (Chen-1995)	12.87
		95% Modified-t UCL (Johnson-1978)	13.12

Nonparametric Distribution Free UCLs

95% CLT UCL	12.57	95% Jackknife UCL	13.07
95% Standard Bootstrap UCL	12.35	95% Bootstrap-t UCL	13.65
95% Hall's Bootstrap UCL	11.52	95% Percentile Bootstrap UCL	12.39
95% BCA Bootstrap UCL	12.4		
90% Chebyshev(Mean, Sd) UCL	15.72	95% Chebyshev(Mean, Sd) UCL	18.89
97.5% Chebyshev(Mean, Sd) UCL	23.28	99% Chebyshev(Mean, Sd) UCL	31.91

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.03	Mean	1.256
Maximum	1.33	Median	1.31
SD	0.105	Std. Error of Mean	0.0348
Coefficient of Variation	0.0832	Skewness	-1.715
Mean of logged Data	0.224	SD of logged Data	0.0886

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.32	95% Adjusted-CLT UCL (Chen-1995)	1.292
		95% Modified-t UCL (Johnson-1978)	1.317

Nonparametric Distribution Free UCLs

95% CLT UCL	1.313	95% Jackknife UCL	1.32
95% Standard Bootstrap UCL	1.308	95% Bootstrap-t UCL	1.306
95% Hall's Bootstrap UCL	1.296	95% Percentile Bootstrap UCL	1.308
95% BCA Bootstrap UCL	1.296		
90% Chebyshev(Mean, Sd) UCL	1.36	95% Chebyshev(Mean, Sd) UCL	1.407
97.5% Chebyshev(Mean, Sd) UCL	1.473	99% Chebyshev(Mean, Sd) UCL	1.602

Suggested UCL to Use

95% Student's-t UCL	1.32	or 95% Modified-t UCL	1.317

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.28	Mean	4.409
Maximum	7.49	Median	3.305
SD	1.969	Std. Error of Mean	0.656
Coefficient of Variation	0.447	Skewness	0.794
Mean of logged Data	1.401	SD of logged Data	0.424

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.63	95% Adjusted-CLT UCL (Chen-1995)	5.675
		95% Modified-t UCL (Johnson-1978)	5.659

Nonparametric Distribution Free UCLs

95% CLT UCL	5.489	95% Jackknife UCL	5.63
95% Standard Bootstrap UCL	5.432	95% Bootstrap-t UCL	5.832
95% Hall's Bootstrap UCL	5.238	95% Percentile Bootstrap UCL	5.488
95% BCA Bootstrap UCL	5.438		
90% Chebyshev(Mean, Sd) UCL	6.379	95% Chebyshev(Mean, Sd) UCL	7.27
97.5% Chebyshev(Mean, Sd) UCL	8.508	99% Chebyshev(Mean, Sd) UCL	10.94

Suggested UCL to Use

95% Student's-t UCL	5.63	or 95% Modified-t UCL	5.659

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.891	Mean	1.478
Maximum	2.74	Median	0.995
SD	0.733	Std. Error of Mean	0.244
Coefficient of Variation	0.496	Skewness	0.999
Mean of logged Data	0.294	SD of logged Data	0.451

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1.932	95% Adjusted-CLT UCL (Chen-1995)	1.966
		95% Modified-t UCL (Johnson-1978)	1.946

Nonparametric Distribution Free UCLs

95% CLT UCL	1.88	95% Jackknife UCL	1.932
95% Standard Bootstrap UCL	1.855	95% Bootstrap-t UCL	2.187
95% Hall's Bootstrap UCL	1.788	95% Percentile Bootstrap UCL	1.879
95% BCA Bootstrap UCL	1.961		
90% Chebyshev(Mean, Sd) UCL	2.211	95% Chebyshev(Mean, Sd) UCL	2.542
97.5% Chebyshev(Mean, Sd) UCL	3.003	99% Chebyshev(Mean, Sd) UCL	3.908

Suggested UCL to Use

95% Student's-t UCL	1.932	or 95% Modified-t UCL	1.946

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.41	Mean	6.489
Maximum	13.6	Median	3.32
SD	4.492	Std. Error of Mean	1.497
Coefficient of Variation	0.692	Skewness	0.794
Mean of logged Data	1.657	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.274	95% Adjusted-CLT UCL (Chen-1995)	9.376
		95% Modified-t UCL (Johnson-1978)	9.34

Nonparametric Distribution Free UCLs

95% CLT UCL	8.952	95% Jackknife UCL	9.274
95% Standard Bootstrap UCL	8.802	95% Bootstrap-t UCL	10.36
95% Hall's Bootstrap UCL	9.001	95% Percentile Bootstrap UCL	8.855
95% BCA Bootstrap UCL	9.283		
90% Chebyshev(Mean, Sd) UCL	10.98	95% Chebyshev(Mean, Sd) UCL	13.02
97.5% Chebyshev(Mean, Sd) UCL	15.84	99% Chebyshev(Mean, Sd) UCL	21.39

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.29	Mean	7.985
Maximum	17.6	Median	5.29
SD	5.399	Std. Error of Mean	1.8
Coefficient of Variation	0.676	Skewness	0.661
Mean of logged Data	1.862	SD of logged Data	0.702

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.33	95% Adjusted-CLT UCL (Chen-1995)	11.37
		95% Modified-t UCL (Johnson-1978)	11.4

Nonparametric Distribution Free UCLs

95% CLT UCL	10.95	95% Jackknife UCL	11.33
95% Standard Bootstrap UCL	10.76	95% Bootstrap-t UCL	11.83
95% Hall's Bootstrap UCL	10.7	95% Percentile Bootstrap UCL	10.81
95% BCA Bootstrap UCL	10.98		
90% Chebyshev(Mean, Sd) UCL	13.38	95% Chebyshev(Mean, Sd) UCL	15.83
97.5% Chebyshev(Mean, Sd) UCL	19.22	99% Chebyshev(Mean, Sd) UCL	25.89

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/26/2021 10:26:44 AM
From File	38002C_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	6.65	Mean	10.45
Maximum	12.5	Median	11.1
SD	1.691	Std. Error of Mean	0.564
Coefficient of Variation	0.162	Skewness	-1.56
Mean of logged Data	2.332	SD of logged Data	0.185

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.49	95% Adjusted-CLT UCL (Chen-1995)	11.06
		95% Modified-t UCL (Johnson-1978)	11.44

Nonparametric Distribution Free UCLs

95% CLT UCL	11.37	95% Jackknife UCL	11.49
95% Standard Bootstrap UCL	11.32	95% Bootstrap-t UCL	11.23
95% Hall's Bootstrap UCL	11.12	95% Percentile Bootstrap UCL	11.24
95% BCA Bootstrap UCL	11.12		
90% Chebyshev(Mean, Sd) UCL	12.14	95% Chebyshev(Mean, Sd) UCL	12.9
97.5% Chebyshev(Mean, Sd) UCL	13.97	99% Chebyshev(Mean, Sd) UCL	16.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	7.35	Mean	12.86
Maximum	32.7	Median	10.6
SD	7.543	Std. Error of Mean	2.514
Coefficient of Variation	0.586	Skewness	2.835

Mean of logged Data	2.46	SD of logged Data	0.408

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.54	95% Adjusted-CLT UCL (Chen-1995)	19.54
		95% Modified-t UCL (Johnson-1978)	17.93

Nonparametric Distribution Free UCLs

95% CLT UCL	17	95% Jackknife UCL	17.54
95% Standard Bootstrap UCL	16.73	95% Bootstrap-t UCL	41.91
95% Hall's Bootstrap UCL	41.54	95% Percentile Bootstrap UCL	17.74
95% BCA Bootstrap UCL	18.24		
90% Chebyshev(Mean, Sd) UCL	20.4	95% Chebyshev(Mean, Sd) UCL	23.82
97.5% Chebyshev(Mean, Sd) UCL	28.56	99% Chebyshev(Mean, Sd) UCL	37.88

Suggested UCL to Use

95% Student's-t UCL	17.54	or 95% Modified-t UCL	17.93

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	27.2	Mean	39.42
Maximum	45.4	Median	40
SD	5.299	Std. Error of Mean	1.766
Coefficient of Variation	0.134	Skewness	-1.677
Mean of logged Data	3.665	SD of logged Data	0.151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.71	95% Adjusted-CLT UCL (Chen-1995)	41.27
		95% Modified-t UCL (Johnson-1978)	42.54

Nonparametric Distribution Free UCLs

95% CLT UCL	42.33	95% Jackknife UCL	42.71
95% Standard Bootstrap UCL	42.11	95% Bootstrap-t UCL	41.86
95% Hall's Bootstrap UCL	41.58	95% Percentile Bootstrap UCL	41.89
95% BCA Bootstrap UCL	41.67		
90% Chebyshev(Mean, Sd) UCL	44.72	95% Chebyshev(Mean, Sd) UCL	47.12
97.5% Chebyshev(Mean, Sd) UCL	50.45	99% Chebyshev(Mean, Sd) UCL	57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.885	Mean	1.373
Maximum	4.815	Median	0.97
SD	1.291	Std. Error of Mean	0.43
Coefficient of Variation	0.94	Skewness	2.994
Mean of logged Data	0.122	SD of logged Data	0.546

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.174	95% Adjusted-CLT UCL (Chen-1995)	2.54
		95% Modified-t UCL (Johnson-1978)	2.245

Nonparametric Distribution Free UCLs

95% CLT UCL	2.081	95% Jackknife UCL	2.174
95% Standard Bootstrap UCL	2.043	95% Bootstrap-t UCL	16.86
95% Hall's Bootstrap UCL	11.21	95% Percentile Bootstrap UCL	2.233
95% BCA Bootstrap UCL	2.257		
90% Chebyshev(Mean, Sd) UCL	2.665	95% Chebyshev(Mean, Sd) UCL	3.25
97.5% Chebyshev(Mean, Sd) UCL	4.061	99% Chebyshev(Mean, Sd) UCL	5.656

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.25

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.473	Mean	0.505
Maximum	0.53	Median	0.515
SD	0.0231	Std. Error of Mean	0.0077
Coefficient of Variation	0.0458	Skewness	-0.324
Mean of logged Data	-0.685	SD of logged Data	0.0461

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.519	95% Adjusted-CLT UCL (Chen-1995)	0.516
		95% Modified-t UCL (Johnson-1978)	0.519

Nonparametric Distribution Free UCLs

95% CLT UCL	0.517	95% Jackknife UCL	0.519
95% Standard Bootstrap UCL	0.517	95% Bootstrap-t UCL	0.518
95% Hall's Bootstrap UCL	0.514	95% Percentile Bootstrap UCL	0.517
95% BCA Bootstrap UCL	0.515		
90% Chebyshev(Mean, Sd) UCL	0.528	95% Chebyshev(Mean, Sd) UCL	0.538
97.5% Chebyshev(Mean, Sd) UCL	0.553	99% Chebyshev(Mean, Sd) UCL	0.581

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.047
Maximum	2.155	Median	2.085
SD	0.0929	Std. Error of Mean	0.031
Coefficient of Variation	0.0454	Skewness	-0.301
Mean of logged Data	0.716	SD of logged Data	0.0457

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.105	95% Adjusted-CLT UCL (Chen-1995)	2.095
		95% Modified-t UCL (Johnson-1978)	2.104

Nonparametric Distribution Free UCLs

95% CLT UCL	2.098	95% Jackknife UCL	2.105
95% Standard Bootstrap UCL	2.095	95% Bootstrap-t UCL	2.1
95% Hall's Bootstrap UCL	2.088	95% Percentile Bootstrap UCL	2.096
95% BCA Bootstrap UCL	2.092		
90% Chebyshev(Mean, Sd) UCL	2.14	95% Chebyshev(Mean, Sd) UCL	2.182

97.5% Chebyshev(Mean, Sd) UCL	2.241	99% Chebyshev(Mean, Sd) UCL	2.355

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.224
Maximum	2.9	Median	2.105
SD	0.377	Std. Error of Mean	0.126
Coefficient of Variation	0.169	Skewness	1.339
Mean of logged Data	0.788	SD of logged Data	0.158

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.458	95% Adjusted-CLT UCL (Chen-1995)	2.491
		95% Modified-t UCL (Johnson-1978)	2.467

Nonparametric Distribution Free UCLs

95% CLT UCL	2.431	95% Jackknife UCL	2.458
95% Standard Bootstrap UCL	2.42	95% Bootstrap-t UCL	2.857
95% Hall's Bootstrap UCL	3.845	95% Percentile Bootstrap UCL	2.43
95% BCA Bootstrap UCL	2.48		
90% Chebyshev(Mean, Sd) UCL	2.601	95% Chebyshev(Mean, Sd) UCL	2.772
97.5% Chebyshev(Mean, Sd) UCL	3.009	99% Chebyshev(Mean, Sd) UCL	3.475

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.391
Maximum	3.8	Median	2.085
SD	0.735	Std. Error of Mean	0.245

Coefficient of Variation	0.308	Skewness	1.6
Mean of logged Data	0.837	SD of logged Data	0.267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.846	95% Adjusted-CLT UCL (Chen-1995)	2.933
		95% Modified-t UCL (Johnson-1978)	2.868

Nonparametric Distribution Free UCLs

95% CLT UCL	2.794	95% Jackknife UCL	2.846
95% Standard Bootstrap UCL	2.765	95% Bootstrap-t UCL	5.571
95% Hall's Bootstrap UCL	5.977	95% Percentile Bootstrap UCL	2.781
95% BCA Bootstrap UCL	2.941		
90% Chebyshev(Mean, Sd) UCL	3.126	95% Chebyshev(Mean, Sd) UCL	3.459
97.5% Chebyshev(Mean, Sd) UCL	3.921	99% Chebyshev(Mean, Sd) UCL	4.829

Suggested UCL to Use

95% Student's-t UCL	2.846	or 95% Modified-t UCL	2.868

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.955	Mean	3.712
Maximum	5.44	Median	3.235
SD	0.991	Std. Error of Mean	0.33
Coefficient of Variation	0.267	Skewness	1.183
Mean of logged Data	1.283	SD of logged Data	0.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.326	95% Adjusted-CLT UCL (Chen-1995)	4.394
		95% Modified-t UCL (Johnson-1978)	4.348

Nonparametric Distribution Free UCLs

95% CLT UCL	4.255	95% Jackknife UCL	4.326
95% Standard Bootstrap UCL	4.213	95% Bootstrap-t UCL	5.026
95% Hall's Bootstrap UCL	4.39	95% Percentile Bootstrap UCL	4.248
95% BCA Bootstrap UCL	4.342		
90% Chebyshev(Mean, Sd) UCL	4.703	95% Chebyshev(Mean, Sd) UCL	5.152
97.5% Chebyshev(Mean, Sd) UCL	5.775	99% Chebyshev(Mean, Sd) UCL	6.998

Suggested UCL to Use

95% Student's-t UCL	4.326	or 95% Modified-t UCL	4.348

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.4	Mean	2.958
Maximum	3.315	Median	2.995
SD	0.331	Std. Error of Mean	0.11
Coefficient of Variation	0.112	Skewness	-1.043
Mean of logged Data	1.079	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.164	95% Adjusted-CLT UCL (Chen-1995)	3.099
		95% Modified-t UCL (Johnson-1978)	3.157

Nonparametric Distribution Free UCLs

95% CLT UCL	3.14	95% Jackknife UCL	3.164
95% Standard Bootstrap UCL	3.129	95% Bootstrap-t UCL	3.134
95% Hall's Bootstrap UCL	3.096	95% Percentile Bootstrap UCL	3.116
95% BCA Bootstrap UCL	3.102		
90% Chebyshev(Mean, Sd) UCL	3.29	95% Chebyshev(Mean, Sd) UCL	3.44
97.5% Chebyshev(Mean, Sd) UCL	3.648	99% Chebyshev(Mean, Sd) UCL	4.058

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.047
Maximum	2.155	Median	2.085
SD	0.0929	Std. Error of Mean	0.031
Coefficient of Variation	0.0454	Skewness	-0.301

Mean of logged Data	0.716	SD of logged Data	0.0457

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.105	95% Adjusted-CLT UCL (Chen-1995)	2.095
		95% Modified-t UCL (Johnson-1978)	2.104

Nonparametric Distribution Free UCLs

95% CLT UCL	2.098	95% Jackknife UCL	2.105
95% Standard Bootstrap UCL	2.095	95% Bootstrap-t UCL	2.104
95% Hall's Bootstrap UCL	2.088	95% Percentile Bootstrap UCL	2.095
95% BCA Bootstrap UCL	2.094		
90% Chebyshev(Mean, Sd) UCL	2.14	95% Chebyshev(Mean, Sd) UCL	2.182
97.5% Chebyshev(Mean, Sd) UCL	2.241	99% Chebyshev(Mean, Sd) UCL	2.355

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.622
Maximum	4.33	Median	2.105
SD	0.956	Std. Error of Mean	0.319
Coefficient of Variation	0.365	Skewness	1.117
Mean of logged Data	0.912	SD of logged Data	0.33

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.215	95% Adjusted-CLT UCL (Chen-1995)	3.273
		95% Modified-t UCL (Johnson-1978)	3.235

Nonparametric Distribution Free UCLs

95% CLT UCL	3.147	95% Jackknife UCL	3.215
95% Standard Bootstrap UCL	3.111	95% Bootstrap-t UCL	3.701
95% Hall's Bootstrap UCL	3.007	95% Percentile Bootstrap UCL	3.139
95% BCA Bootstrap UCL	3.257		

90% Chebyshev(Mean, Sd) UCL	3.579	95% Chebyshev(Mean, Sd) UCL	4.012
97.5% Chebyshev(Mean, Sd) UCL	4.613	99% Chebyshev(Mean, Sd) UCL	5.794

Suggested UCL to Use

95% Student's-t UCL	3.215	or 95% Modified-t UCL	3.235

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.955	Mean	3.15
Maximum	3.315	Median	3.21
SD	0.142	Std. Error of Mean	0.0475
Coefficient of Variation	0.0452	Skewness	-0.309
Mean of logged Data	1.146	SD of logged Data	0.0455

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.238	95% Adjusted-CLT UCL (Chen-1995)	3.223
		95% Modified-t UCL (Johnson-1978)	3.237

Nonparametric Distribution Free UCLs

95% CLT UCL	3.228	95% Jackknife UCL	3.238
95% Standard Bootstrap UCL	3.224	95% Bootstrap-t UCL	3.234
95% Hall's Bootstrap UCL	3.213	95% Percentile Bootstrap UCL	3.219
95% BCA Bootstrap UCL	3.222		
90% Chebyshev(Mean, Sd) UCL	3.292	95% Chebyshev(Mean, Sd) UCL	3.357
97.5% Chebyshev(Mean, Sd) UCL	3.446	99% Chebyshev(Mean, Sd) UCL	3.622

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.97
Maximum	4.95	Median	2.105

SD	1.437	Std. Error of Mean	0.479
Coefficient of Variation	0.484	Skewness	0.849
Mean of logged Data	0.994	SD of logged Data	0.445

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.861	95% Adjusted-CLT UCL (Chen-1995)	3.903
		95% Modified-t UCL (Johnson-1978)	3.884

Nonparametric Distribution Free UCLs

95% CLT UCL	3.758	95% Jackknife UCL	3.861
95% Standard Bootstrap UCL	3.725	95% Bootstrap-t UCL	3.965
95% Hall's Bootstrap UCL	3.422	95% Percentile Bootstrap UCL	3.638
95% BCA Bootstrap UCL	3.911		
90% Chebyshev(Mean, Sd) UCL	4.407	95% Chebyshev(Mean, Sd) UCL	5.059
97.5% Chebyshev(Mean, Sd) UCL	5.962	99% Chebyshev(Mean, Sd) UCL	7.737

Suggested UCL to Use

95% Student's-t UCL	3.861	or 95% Modified-t UCL	3.884

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.18	Mean	1.261
Maximum	1.325	Median	1.285
SD	0.0574	Std. Error of Mean	0.0191
Coefficient of Variation	0.0455	Skewness	-0.353
Mean of logged Data	0.231	SD of logged Data	0.0458

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.296	95% Adjusted-CLT UCL (Chen-1995)	1.29
		95% Modified-t UCL (Johnson-1978)	1.296

Nonparametric Distribution Free UCLs

95% CLT UCL	1.292	95% Jackknife UCL	1.296
95% Standard Bootstrap UCL	1.29	95% Bootstrap-t UCL	1.295
95% Hall's Bootstrap UCL	1.286	95% Percentile Bootstrap UCL	1.29
95% BCA Bootstrap UCL	1.29		
90% Chebyshev(Mean, Sd) UCL	1.318	95% Chebyshev(Mean, Sd) UCL	1.344

97.5% Chebyshev(Mean, Sd) UCL	1.38	99% Chebyshev(Mean, Sd) UCL	1.451

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.64	Mean	3.009
Maximum	3.315	Median	2.995
SD	0.24	Std. Error of Mean	0.08
Coefficient of Variation	0.0798	Skewness	-0.562
Mean of logged Data	1.099	SD of logged Data	0.0815

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.158	95% Adjusted-CLT UCL (Chen-1995)	3.125
		95% Modified-t UCL (Johnson-1978)	3.156

Nonparametric Distribution Free UCLs

95% CLT UCL	3.141	95% Jackknife UCL	3.158
95% Standard Bootstrap UCL	3.136	95% Bootstrap-t UCL	3.132
95% Hall's Bootstrap UCL	3.123	95% Percentile Bootstrap UCL	3.129
95% BCA Bootstrap UCL	3.117		
90% Chebyshev(Mean, Sd) UCL	3.25	95% Chebyshev(Mean, Sd) UCL	3.358
97.5% Chebyshev(Mean, Sd) UCL	3.509	99% Chebyshev(Mean, Sd) UCL	3.806

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.9	Mean	4.104
Maximum	10.5	Median	4.49
SD	3.022	Std. Error of Mean	1.007
Coefficient of Variation	0.736	Skewness	0.98
Mean of logged Data	1.103	SD of logged Data	0.911

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.978	95% Adjusted-CLT UCL (Chen-1995)	6.113
		95% Modified-t UCL (Johnson-1978)	6.032

Nonparametric Distribution Free UCLs

95% CLT UCL	5.761	95% Jackknife UCL	5.978
95% Standard Bootstrap UCL	5.673	95% Bootstrap-t UCL	6.4
95% Hall's Bootstrap UCL	7.087	95% Percentile Bootstrap UCL	5.657
95% BCA Bootstrap UCL	5.969		
90% Chebyshev(Mean, Sd) UCL	7.127	95% Chebyshev(Mean, Sd) UCL	8.495
97.5% Chebyshev(Mean, Sd) UCL	10.4	99% Chebyshev(Mean, Sd) UCL	14.13

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.495

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.955	Mean	3.15
Maximum	3.315	Median	3.21
SD	0.142	Std. Error of Mean	0.0475
Coefficient of Variation	0.0452	Skewness	-0.309
Mean of logged Data	1.146	SD of logged Data	0.0455

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.238	95% Adjusted-CLT UCL (Chen-1995)	3.223
		95% Modified-t UCL (Johnson-1978)	3.237

Nonparametric Distribution Free UCLs

95% CLT UCL	3.228	95% Jackknife UCL	3.238
95% Standard Bootstrap UCL	3.225	95% Bootstrap-t UCL	3.24
95% Hall's Bootstrap UCL	3.213	95% Percentile Bootstrap UCL	3.221

95% BCA Bootstrap UCL	3.217		
90% Chebyshev(Mean, Sd) UCL	3.292	95% Chebyshev(Mean, Sd) UCL	3.357
97.5% Chebyshev(Mean, Sd) UCL	3.446	99% Chebyshev(Mean, Sd) UCL	3.622

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.4	Mean	3.651
Maximum	5.57	Median	3.095
SD	1.108	Std. Error of Mean	0.369
Coefficient of Variation	0.303	Skewness	0.856
Mean of logged Data	1.257	SD of logged Data	0.287

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.338	95% Adjusted-CLT UCL (Chen-1995)	4.371
		95% Modified-t UCL (Johnson-1978)	4.355

Nonparametric Distribution Free UCLs

95% CLT UCL	4.259	95% Jackknife UCL	4.338
95% Standard Bootstrap UCL	4.215	95% Bootstrap-t UCL	4.573
95% Hall's Bootstrap UCL	4.195	95% Percentile Bootstrap UCL	4.243
95% BCA Bootstrap UCL	4.307		
90% Chebyshev(Mean, Sd) UCL	4.759	95% Chebyshev(Mean, Sd) UCL	5.261
97.5% Chebyshev(Mean, Sd) UCL	5.957	99% Chebyshev(Mean, Sd) UCL	7.326

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:24:17 PM
From File	38002D_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.91	Mean	10.93
Maximum	11.8	Median	11
SD	0.581	Std. Error of Mean	0.194
Coefficient of Variation	0.0531	Skewness	-0.197
Mean of logged Data	2.391	SD of logged Data	0.0535

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.29	95% Adjusted-CLT UCL (Chen-1995)	11.24
		95% Modified-t UCL (Johnson-1978)	11.29

Nonparametric Distribution Free UCLs

95% CLT UCL	11.25	95% Jackknife UCL	11.29
95% Standard Bootstrap UCL	11.24	95% Bootstrap-t UCL	11.3
95% Hall's Bootstrap UCL	11.28	95% Percentile Bootstrap UCL	11.22
95% BCA Bootstrap UCL	11.22		
90% Chebyshev(Mean, Sd) UCL	11.52	95% Chebyshev(Mean, Sd) UCL	11.78
97.5% Chebyshev(Mean, Sd) UCL	12.14	99% Chebyshev(Mean, Sd) UCL	12.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.2	Mean	10.16
Maximum	11.4	Median	10.1
SD	0.59	Std. Error of Mean	0.197
Coefficient of Variation	0.0581	Skewness	0.778

Mean of logged Data	2.317	SD of logged Data	0.0573

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.52	95% Adjusted-CLT UCL (Chen-1995)	10.54
		95% Modified-t UCL (Johnson-1978)	10.53

Nonparametric Distribution Free UCLs

95% CLT UCL	10.48	95% Jackknife UCL	10.52
95% Standard Bootstrap UCL	10.46	95% Bootstrap-t UCL	10.59
95% Hall's Bootstrap UCL	11.1	95% Percentile Bootstrap UCL	10.47
95% BCA Bootstrap UCL	10.49		
90% Chebyshev(Mean, Sd) UCL	10.75	95% Chebyshev(Mean, Sd) UCL	11.01
97.5% Chebyshev(Mean, Sd) UCL	11.39	99% Chebyshev(Mean, Sd) UCL	12.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	37	Mean	40.24
Maximum	43.1	Median	40.2
SD	1.944	Std. Error of Mean	0.648
Coefficient of Variation	0.0483	Skewness	-0.28
Mean of logged Data	3.694	SD of logged Data	0.0486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.45	95% Adjusted-CLT UCL (Chen-1995)	41.25
		95% Modified-t UCL (Johnson-1978)	41.44

Nonparametric Distribution Free UCLs

95% CLT UCL	41.31	95% Jackknife UCL	41.45
95% Standard Bootstrap UCL	41.24	95% Bootstrap-t UCL	41.37
95% Hall's Bootstrap UCL	41.22	95% Percentile Bootstrap UCL	41.23
95% BCA Bootstrap UCL	41.16		
90% Chebyshev(Mean, Sd) UCL	42.19	95% Chebyshev(Mean, Sd) UCL	43.07
97.5% Chebyshev(Mean, Sd) UCL	44.29	99% Chebyshev(Mean, Sd) UCL	46.69

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.639	Mean	0.898
Maximum	1.06	Median	0.98
SD	0.156	Std. Error of Mean	0.0521
Coefficient of Variation	0.174	Skewness	-0.718
Mean of logged Data	-0.122	SD of logged Data	0.186

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.995	95% Adjusted-CLT UCL (Chen-1995)	0.971
		95% Modified-t UCL (Johnson-1978)	0.993

Nonparametric Distribution Free UCLs

95% CLT UCL	0.984	95% Jackknife UCL	0.995
95% Standard Bootstrap UCL	0.981	95% Bootstrap-t UCL	0.987
95% Hall's Bootstrap UCL	0.963	95% Percentile Bootstrap UCL	0.976
95% BCA Bootstrap UCL	0.967		
90% Chebyshev(Mean, Sd) UCL	1.055	95% Chebyshev(Mean, Sd) UCL	1.125
97.5% Chebyshev(Mean, Sd) UCL	1.224	99% Chebyshev(Mean, Sd) UCL	1.417

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.486	Mean	0.516
Maximum	0.53	Median	0.525

SD	0.0151	Std. Error of Mean	0.00504
Coefficient of Variation	0.0293	Skewness	-1.157
Mean of logged Data	-0.662	SD of logged Data	0.0297

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.526	95% Adjusted-CLT UCL (Chen-1995)	0.522
		95% Modified-t UCL (Johnson-1978)	0.525

Nonparametric Distribution Free UCLs

95% CLT UCL	0.525	95% Jackknife UCL	0.526
95% Standard Bootstrap UCL	0.524	95% Bootstrap-t UCL	0.524
95% Hall's Bootstrap UCL	0.523	95% Percentile Bootstrap UCL	0.524
95% BCA Bootstrap UCL	0.523		
90% Chebyshev(Mean, Sd) UCL	0.531	95% Chebyshev(Mean, Sd) UCL	0.538
97.5% Chebyshev(Mean, Sd) UCL	0.548	99% Chebyshev(Mean, Sd) UCL	0.566

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	2.097
Maximum	2.16	Median	2.125
SD	0.0627	Std. Error of Mean	0.0209
Coefficient of Variation	0.0299	Skewness	-1.035
Mean of logged Data	0.74	SD of logged Data	0.0303

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.136	95% Adjusted-CLT UCL (Chen-1995)	2.124
		95% Modified-t UCL (Johnson-1978)	2.135

Nonparametric Distribution Free UCLs

95% CLT UCL	2.132	95% Jackknife UCL	2.136
95% Standard Bootstrap UCL	2.129	95% Bootstrap-t UCL	2.128

95% Hall's Bootstrap UCL	2.124	95% Percentile Bootstrap UCL	2.128
95% BCA Bootstrap UCL	2.124		
90% Chebyshev(Mean, Sd) UCL	2.16	95% Chebyshev(Mean, Sd) UCL	2.188
97.5% Chebyshev(Mean, Sd) UCL	2.228	99% Chebyshev(Mean, Sd) UCL	2.305

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.74	Mean	2.058
Maximum	2.16	Median	2.125
SD	0.135	Std. Error of Mean	0.0449
Coefficient of Variation	0.0654	Skewness	-1.939
Mean of logged Data	0.72	SD of logged Data	0.0691

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.141	95% Adjusted-CLT UCL (Chen-1995)	2.101
		95% Modified-t UCL (Johnson-1978)	2.136

Nonparametric Distribution Free UCLs

95% CLT UCL	2.132	95% Jackknife UCL	2.141
95% Standard Bootstrap UCL	2.129	95% Bootstrap-t UCL	2.115
95% Hall's Bootstrap UCL	2.108	95% Percentile Bootstrap UCL	2.119
95% BCA Bootstrap UCL	2.11		
90% Chebyshev(Mean, Sd) UCL	2.192	95% Chebyshev(Mean, Sd) UCL	2.253
97.5% Chebyshev(Mean, Sd) UCL	2.338	99% Chebyshev(Mean, Sd) UCL	2.504

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	2.127
Maximum	2.36	Median	2.13
SD	0.108	Std. Error of Mean	0.0359
Coefficient of Variation	0.0506	Skewness	1.049
Mean of logged Data	0.753	SD of logged Data	0.0497

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.193	95% Adjusted-CLT UCL (Chen-1995)	2.199
		95% Modified-t UCL (Johnson-1978)	2.195

Nonparametric Distribution Free UCLs

95% CLT UCL	2.186	95% Jackknife UCL	2.193
95% Standard Bootstrap UCL	2.181	95% Bootstrap-t UCL	2.208
95% Hall's Bootstrap UCL	2.274	95% Percentile Bootstrap UCL	2.186
95% BCA Bootstrap UCL	2.194		
90% Chebyshev(Mean, Sd) UCL	2.234	95% Chebyshev(Mean, Sd) UCL	2.283
97.5% Chebyshev(Mean, Sd) UCL	2.351	99% Chebyshev(Mean, Sd) UCL	2.484

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.64	Mean	3.202
Maximum	3.56	Median	3.27
SD	0.253	Std. Error of Mean	0.0843
Coefficient of Variation	0.079	Skewness	-1.3
Mean of logged Data	1.161	SD of logged Data	0.0829

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.358	95% Adjusted-CLT UCL (Chen-1995)	3.301
		95% Modified-t UCL (Johnson-1978)	3.352

Nonparametric Distribution Free UCLs

95% CLT UCL	3.34	95% Jackknife UCL	3.358
95% Standard Bootstrap UCL	3.335	95% Bootstrap-t UCL	3.323
95% Hall's Bootstrap UCL	3.313	95% Percentile Bootstrap UCL	3.322
95% BCA Bootstrap UCL	3.311		
90% Chebyshev(Mean, Sd) UCL	3.455	95% Chebyshev(Mean, Sd) UCL	3.569
97.5% Chebyshev(Mean, Sd) UCL	3.728	99% Chebyshev(Mean, Sd) UCL	4.041

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.04	Mean	3.228
Maximum	3.325	Median	3.27
SD	0.096	Std. Error of Mean	0.032
Coefficient of Variation	0.0297	Skewness	-1.045
Mean of logged Data	1.171	SD of logged Data	0.0301

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.287	95% Adjusted-CLT UCL (Chen-1995)	3.268
		95% Modified-t UCL (Johnson-1978)	3.285

Nonparametric Distribution Free UCLs

95% CLT UCL	3.28	95% Jackknife UCL	3.287
95% Standard Bootstrap UCL	3.278	95% Bootstrap-t UCL	3.276
95% Hall's Bootstrap UCL	3.269	95% Percentile Bootstrap UCL	3.273
95% BCA Bootstrap UCL	3.269		
90% Chebyshev(Mean, Sd) UCL	3.324	95% Chebyshev(Mean, Sd) UCL	3.367
97.5% Chebyshev(Mean, Sd) UCL	3.428	99% Chebyshev(Mean, Sd) UCL	3.546

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	2.097
Maximum	2.16	Median	2.125
SD	0.0627	Std. Error of Mean	0.0209
Coefficient of Variation	0.0299	Skewness	-1.035
Mean of logged Data	0.74	SD of logged Data	0.0303

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.136	95% Adjusted-CLT UCL (Chen-1995)	2.124
		95% Modified-t UCL (Johnson-1978)	2.135

Nonparametric Distribution Free UCLs

95% CLT UCL	2.132	95% Jackknife UCL	2.136
95% Standard Bootstrap UCL	2.13	95% Bootstrap-t UCL	2.129
95% Hall's Bootstrap UCL	2.124	95% Percentile Bootstrap UCL	2.128
95% BCA Bootstrap UCL	2.124		
90% Chebyshev(Mean, Sd) UCL	2.16	95% Chebyshev(Mean, Sd) UCL	2.188
97.5% Chebyshev(Mean, Sd) UCL	2.228	99% Chebyshev(Mean, Sd) UCL	2.305

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	2.363
Maximum	3.17	Median	2.16
SD	0.416	Std. Error of Mean	0.139
Coefficient of Variation	0.176	Skewness	1.314
Mean of logged Data	0.848	SD of logged Data	0.164

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.621	95% Adjusted-CLT UCL (Chen-1995)	2.656
		95% Modified-t UCL (Johnson-1978)	2.631

Nonparametric Distribution Free UCLs

95% CLT UCL	2.591	95% Jackknife UCL	2.621
95% Standard Bootstrap UCL	2.581	95% Bootstrap-t UCL	2.99
95% Hall's Bootstrap UCL	3.081	95% Percentile Bootstrap UCL	2.589
95% BCA Bootstrap UCL	2.639		
90% Chebyshev(Mean, Sd) UCL	2.779	95% Chebyshev(Mean, Sd) UCL	2.968
97.5% Chebyshev(Mean, Sd) UCL	3.23	99% Chebyshev(Mean, Sd) UCL	3.743

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.04	Mean	3.228
Maximum	3.325	Median	3.27
SD	0.096	Std. Error of Mean	0.032
Coefficient of Variation	0.0297	Skewness	-1.045
Mean of logged Data	1.171	SD of logged Data	0.0301

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.287	95% Adjusted-CLT UCL (Chen-1995)	3.268
		95% Modified-t UCL (Johnson-1978)	3.285

Nonparametric Distribution Free UCLs

95% CLT UCL	3.28	95% Jackknife UCL	3.287
95% Standard Bootstrap UCL	3.277	95% Bootstrap-t UCL	3.275
95% Hall's Bootstrap UCL	3.269	95% Percentile Bootstrap UCL	3.274
95% BCA Bootstrap UCL	3.271		
90% Chebyshev(Mean, Sd) UCL	3.324	95% Chebyshev(Mean, Sd) UCL	3.367
97.5% Chebyshev(Mean, Sd) UCL	3.428	99% Chebyshev(Mean, Sd) UCL	3.546

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	2.42
Maximum	3.13	Median	2.155
SD	0.512	Std. Error of Mean	0.171
Coefficient of Variation	0.211	Skewness	0.81
Mean of logged Data	0.865	SD of logged Data	0.201

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.737	95% Adjusted-CLT UCL (Chen-1995)	2.75
		95% Modified-t UCL (Johnson-1978)	2.745

Nonparametric Distribution Free UCLs

95% CLT UCL	2.701	95% Jackknife UCL	2.737
95% Standard Bootstrap UCL	2.683	95% Bootstrap-t UCL	2.785
95% Hall's Bootstrap UCL	2.593	95% Percentile Bootstrap UCL	2.674
95% BCA Bootstrap UCL	2.667		
90% Chebyshev(Mean, Sd) UCL	2.932	95% Chebyshev(Mean, Sd) UCL	3.164
97.5% Chebyshev(Mean, Sd) UCL	3.485	99% Chebyshev(Mean, Sd) UCL	4.117

Suggested UCL to Use

95% Student's-t UCL	2.737	or 95% Modified-t UCL	2.745

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.215	Mean	1.291
Maximum	1.33	Median	1.305
SD	0.0387	Std. Error of Mean	0.0129
Coefficient of Variation	0.03	Skewness	-1.023
Mean of logged Data	0.255	SD of logged Data	0.0304

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1.315	95% Adjusted-CLT UCL (Chen-1995)	1.307
		95% Modified-t UCL (Johnson-1978)	1.314

Nonparametric Distribution Free UCLs

95% CLT UCL	1.312	95% Jackknife UCL	1.315
95% Standard Bootstrap UCL	1.31	95% Bootstrap-t UCL	1.309
95% Hall's Bootstrap UCL	1.307	95% Percentile Bootstrap UCL	1.309
95% BCA Bootstrap UCL	1.308		
90% Chebyshev(Mean, Sd) UCL	1.329	95% Chebyshev(Mean, Sd) UCL	1.347
97.5% Chebyshev(Mean, Sd) UCL	1.371	99% Chebyshev(Mean, Sd) UCL	1.419

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.04	Mean	3.228
Maximum	3.325	Median	3.27
SD	0.096	Std. Error of Mean	0.032
Coefficient of Variation	0.0297	Skewness	-1.045
Mean of logged Data	1.171	SD of logged Data	0.0301

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.287	95% Adjusted-CLT UCL (Chen-1995)	3.268
		95% Modified-t UCL (Johnson-1978)	3.285

Nonparametric Distribution Free UCLs

95% CLT UCL	3.28	95% Jackknife UCL	3.287
95% Standard Bootstrap UCL	3.277	95% Bootstrap-t UCL	3.277
95% Hall's Bootstrap UCL	3.268	95% Percentile Bootstrap UCL	3.274
95% BCA Bootstrap UCL	3.269		
90% Chebyshev(Mean, Sd) UCL	3.324	95% Chebyshev(Mean, Sd) UCL	3.367
97.5% Chebyshev(Mean, Sd) UCL	3.428	99% Chebyshev(Mean, Sd) UCL	3.546

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.27	Mean	2.329
Maximum	6.39	Median	1.79
SD	1.576	Std. Error of Mean	0.525
Coefficient of Variation	0.677	Skewness	2.625
Mean of logged Data	0.716	SD of logged Data	0.484

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.306	95% Adjusted-CLT UCL (Chen-1995)	3.684
		95% Modified-t UCL (Johnson-1978)	3.383

Nonparametric Distribution Free UCLs

95% CLT UCL	3.193	95% Jackknife UCL	3.306
95% Standard Bootstrap UCL	3.144	95% Bootstrap-t UCL	5.12
95% Hall's Bootstrap UCL	6.48	95% Percentile Bootstrap UCL	3.304
95% BCA Bootstrap UCL	3.833		
90% Chebyshev(Mean, Sd) UCL	3.905	95% Chebyshev(Mean, Sd) UCL	4.619
97.5% Chebyshev(Mean, Sd) UCL	5.61	99% Chebyshev(Mean, Sd) UCL	7.557

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.04	Mean	3.228
Maximum	3.325	Median	3.27
SD	0.096	Std. Error of Mean	0.032
Coefficient of Variation	0.0297	Skewness	-1.045
Mean of logged Data	1.171	SD of logged Data	0.0301

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.287	95% Adjusted-CLT UCL (Chen-1995)	3.268
		95% Modified-t UCL (Johnson-1978)	3.285

Nonparametric Distribution Free UCLs

95% CLT UCL	3.28	95% Jackknife UCL	3.287
95% Standard Bootstrap UCL	3.278	95% Bootstrap-t UCL	3.278
95% Hall's Bootstrap UCL	3.268	95% Percentile Bootstrap UCL	3.275
95% BCA Bootstrap UCL	3.27		
90% Chebyshev(Mean, Sd) UCL	3.324	95% Chebyshev(Mean, Sd) UCL	3.367
97.5% Chebyshev(Mean, Sd) UCL	3.428	99% Chebyshev(Mean, Sd) UCL	3.546

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.54	Mean	3.025
Maximum	3.325	Median	3.18
SD	0.333	Std. Error of Mean	0.111
Coefficient of Variation	0.11	Skewness	-0.682
Mean of logged Data	1.101	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.231	95% Adjusted-CLT UCL (Chen-1995)	3.18
		95% Modified-t UCL (Johnson-1978)	3.227

Nonparametric Distribution Free UCLs

95% CLT UCL	3.207	95% Jackknife UCL	3.231
95% Standard Bootstrap UCL	3.197	95% Bootstrap-t UCL	3.203
95% Hall's Bootstrap UCL	3.163	95% Percentile Bootstrap UCL	3.194
95% BCA Bootstrap UCL	3.179		
90% Chebyshev(Mean, Sd) UCL	3.358	95% Chebyshev(Mean, Sd) UCL	3.508
97.5% Chebyshev(Mean, Sd) UCL	3.718	99% Chebyshev(Mean, Sd) UCL	4.129

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:25:28 PM
From File	38002E_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	12.7	Mean	15.52
Maximum	18.5	Median	16
SD	2.065	Std. Error of Mean	0.688
Coefficient of Variation	0.133	Skewness	-0.158
Mean of logged Data	2.734	SD of logged Data	0.136

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.8	95% Adjusted-CLT UCL (Chen-1995)	16.62
		95% Modified-t UCL (Johnson-1978)	16.8

Nonparametric Distribution Free UCLs

95% CLT UCL	16.65	95% Jackknife UCL	16.8
95% Standard Bootstrap UCL	16.6	95% Bootstrap-t UCL	16.66
95% Hall's Bootstrap UCL	16.54	95% Percentile Bootstrap UCL	16.61
95% BCA Bootstrap UCL	16.54		
90% Chebyshev(Mean, Sd) UCL	17.59	95% Chebyshev(Mean, Sd) UCL	18.52
97.5% Chebyshev(Mean, Sd) UCL	19.82	99% Chebyshev(Mean, Sd) UCL	22.37

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.1	Mean	28.02
Maximum	88.4	Median	18.7
SD	24.34	Std. Error of Mean	8.113
Coefficient of Variation	0.869	Skewness	2.358

Mean of logged Data	3.115	SD of logged Data	0.63

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.11	95% Adjusted-CLT UCL (Chen-1995)	48.18
		95% Modified-t UCL (Johnson-1978)	44.17

Nonparametric Distribution Free UCLs

95% CLT UCL	41.37	95% Jackknife UCL	43.11
95% Standard Bootstrap UCL	40.63	95% Bootstrap-t UCL	101.3
95% Hall's Bootstrap UCL	127.6	95% Percentile Bootstrap UCL	41.83
95% BCA Bootstrap UCL	46.61		
90% Chebyshev(Mean, Sd) UCL	52.36	95% Chebyshev(Mean, Sd) UCL	63.39
97.5% Chebyshev(Mean, Sd) UCL	78.69	99% Chebyshev(Mean, Sd) UCL	108.7

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	48.9	Mean	55.49
Maximum	62.1	Median	57.5
SD	4.897	Std. Error of Mean	1.632
Coefficient of Variation	0.0882	Skewness	-0.296
Mean of logged Data	4.013	SD of logged Data	0.0895

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.52	95% Adjusted-CLT UCL (Chen-1995)	58
		95% Modified-t UCL (Johnson-1978)	58.5

Nonparametric Distribution Free UCLs

95% CLT UCL	58.17	95% Jackknife UCL	58.52
95% Standard Bootstrap UCL	58.07	95% Bootstrap-t UCL	58.51
95% Hall's Bootstrap UCL	57.72	95% Percentile Bootstrap UCL	57.82
95% BCA Bootstrap UCL	57.96		
90% Chebyshev(Mean, Sd) UCL	60.39	95% Chebyshev(Mean, Sd) UCL	62.6
97.5% Chebyshev(Mean, Sd) UCL	65.68	99% Chebyshev(Mean, Sd) UCL	71.73

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.641	Mean	1.152
Maximum	2.18	Median	0.965
SD	0.465	Std. Error of Mean	0.155
Coefficient of Variation	0.404	Skewness	1.541
Mean of logged Data	0.0802	SD of logged Data	0.36

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.441	95% Adjusted-CLT UCL (Chen-1995)	1.492
		95% Modified-t UCL (Johnson-1978)	1.454

Nonparametric Distribution Free UCLs

95% CLT UCL	1.407	95% Jackknife UCL	1.441
95% Standard Bootstrap UCL	1.396	95% Bootstrap-t UCL	1.745
95% Hall's Bootstrap UCL	2.794	95% Percentile Bootstrap UCL	1.401
95% BCA Bootstrap UCL	1.462		
90% Chebyshev(Mean, Sd) UCL	1.617	95% Chebyshev(Mean, Sd) UCL	1.828
97.5% Chebyshev(Mean, Sd) UCL	2.121	99% Chebyshev(Mean, Sd) UCL	2.695

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.477	Mean	2.524
Maximum	14	Median	0.515
SD	4.482	Std. Error of Mean	1.494
Coefficient of Variation	1.776	Skewness	2.616
Mean of logged Data	0.033	SD of logged Data	1.227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.303	95% Adjusted-CLT UCL (Chen-1995)	6.374
		95% Modified-t UCL (Johnson-1978)	5.52

Nonparametric Distribution Free UCLs

95% CLT UCL	4.982	95% Jackknife UCL	5.303
95% Standard Bootstrap UCL	4.841	95% Bootstrap-t UCL	31.98
95% Hall's Bootstrap UCL	34.85	95% Percentile Bootstrap UCL	5.101
95% BCA Bootstrap UCL	6.922		
90% Chebyshev(Mean, Sd) UCL	7.007	95% Chebyshev(Mean, Sd) UCL	9.037
97.5% Chebyshev(Mean, Sd) UCL	11.86	99% Chebyshev(Mean, Sd) UCL	17.39

Suggested UCL to Use

95% Hall's Bootstrap UCL 34.85

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	5.502
Maximum	27.5	Median	2.095
SD	8.396	Std. Error of Mean	2.799
Coefficient of Variation	1.526	Skewness	2.819
Mean of logged Data	1.178	SD of logged Data	0.896

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.71	95% Adjusted-CLT UCL (Chen-1995)	12.92
		95% Modified-t UCL (Johnson-1978)	11.14

Nonparametric Distribution Free UCLs

95% CLT UCL	10.11	95% Jackknife UCL	10.71
95% Standard Bootstrap UCL	9.803	95% Bootstrap-t UCL	97.31
95% Hall's Bootstrap UCL	91.23	95% Percentile Bootstrap UCL	10.74
95% BCA Bootstrap UCL	13.45		

90% Chebyshev(Mean, Sd) UCL	13.9	95% Chebyshev(Mean, Sd) UCL	17.7
97.5% Chebyshev(Mean, Sd) UCL	22.98	99% Chebyshev(Mean, Sd) UCL	33.35

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	11.88
Maximum	53.7	Median	2.55
SD	17.7	Std. Error of Mean	5.9
Coefficient of Variation	1.491	Skewness	2.04
Mean of logged Data	1.622	SD of logged Data	1.302

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.85	95% Adjusted-CLT UCL (Chen-1995)	25.87
		95% Modified-t UCL (Johnson-1978)	23.52

Nonparametric Distribution Free UCLs

95% CLT UCL	21.58	95% Jackknife UCL	22.85
95% Standard Bootstrap UCL	21.05	95% Bootstrap-t UCL	48.61
95% Hall's Bootstrap UCL	58.15	95% Percentile Bootstrap UCL	22.01
95% BCA Bootstrap UCL	25.97		
90% Chebyshev(Mean, Sd) UCL	29.58	95% Chebyshev(Mean, Sd) UCL	37.59
97.5% Chebyshev(Mean, Sd) UCL	48.72	99% Chebyshev(Mean, Sd) UCL	70.58

Suggested UCL to Use

95% Hall's Bootstrap UCL	58.15

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	11.9

Maximum	50.5	Median	3.17
SD	16.74	Std. Error of Mean	5.581
Coefficient of Variation	1.407	Skewness	1.886
Mean of logged Data	1.677	SD of logged Data	1.281

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.28	95% Adjusted-CLT UCL (Chen-1995)	24.83
		95% Modified-t UCL (Johnson-1978)	22.86

Nonparametric Distribution Free UCLs

95% CLT UCL	21.08	95% Jackknife UCL	22.28
95% Standard Bootstrap UCL	20.34	95% Bootstrap-t UCL	39.93
95% Hall's Bootstrap UCL	50.26	95% Percentile Bootstrap UCL	21.06
95% BCA Bootstrap UCL	23.54		
90% Chebyshev(Mean, Sd) UCL	28.64	95% Chebyshev(Mean, Sd) UCL	36.23
97.5% Chebyshev(Mean, Sd) UCL	46.75	99% Chebyshev(Mean, Sd) UCL	67.43

Suggested UCL to Use

95% Hall's Bootstrap UCL	50.26

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	16.39
Maximum	64.8	Median	4.5
SD	21.78	Std. Error of Mean	7.259
Coefficient of Variation	1.329	Skewness	1.73
Mean of logged Data	2.082	SD of logged Data	1.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.88	95% Adjusted-CLT UCL (Chen-1995)	32.8
		95% Modified-t UCL (Johnson-1978)	30.58

Nonparametric Distribution Free UCLs

95% CLT UCL	28.33	95% Jackknife UCL	29.88
95% Standard Bootstrap UCL	27.45	95% Bootstrap-t UCL	52.91

95% Hall's Bootstrap UCL	46.06	95% Percentile Bootstrap UCL	27.86
95% BCA Bootstrap UCL	30.47		
90% Chebyshev(Mean, Sd) UCL	38.16	95% Chebyshev(Mean, Sd) UCL	48.03
97.5% Chebyshev(Mean, Sd) UCL	61.72	99% Chebyshev(Mean, Sd) UCL	88.61

Suggested UCL to Use

95% Hall's Bootstrap UCL	46.06

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.26	Mean	7.727
Maximum	26.7	Median	3.135
SD	8.476	Std. Error of Mean	2.825
Coefficient of Variation	1.097	Skewness	1.75
Mean of logged Data	1.615	SD of logged Data	0.92

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.98	95% Adjusted-CLT UCL (Chen-1995)	14.14
		95% Modified-t UCL (Johnson-1978)	13.26

Nonparametric Distribution Free UCLs

95% CLT UCL	12.37	95% Jackknife UCL	12.98
95% Standard Bootstrap UCL	12.11	95% Bootstrap-t UCL	21.6
95% Hall's Bootstrap UCL	19.87	95% Percentile Bootstrap UCL	12.2
95% BCA Bootstrap UCL	13.58		
90% Chebyshev(Mean, Sd) UCL	16.2	95% Chebyshev(Mean, Sd) UCL	20.04
97.5% Chebyshev(Mean, Sd) UCL	25.37	99% Chebyshev(Mean, Sd) UCL	35.84

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	20.04

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	7.361

Maximum	28.8	Median	2.09
SD	9.314	Std. Error of Mean	3.105
Coefficient of Variation	1.265	Skewness	1.891
Mean of logged Data	1.42	SD of logged Data	1.06

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.13	95% Adjusted-CLT UCL (Chen-1995)	14.56
		95% Modified-t UCL (Johnson-1978)	13.46

Nonparametric Distribution Free UCLs

95% CLT UCL	12.47	95% Jackknife UCL	13.13
95% Standard Bootstrap UCL	12.21	95% Bootstrap-t UCL	24.25
95% Hall's Bootstrap UCL	29.23	95% Percentile Bootstrap UCL	12.57
95% BCA Bootstrap UCL	14.14		
90% Chebyshev(Mean, Sd) UCL	16.68	95% Chebyshev(Mean, Sd) UCL	20.89
97.5% Chebyshev(Mean, Sd) UCL	26.75	99% Chebyshev(Mean, Sd) UCL	38.25

Suggested UCL to Use

95% Hall's Bootstrap UCL	29.23

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	11.75
Maximum	48.1	Median	3.03
SD	16.06	Std. Error of Mean	5.355
Coefficient of Variation	1.367	Skewness	1.806
Mean of logged Data	1.708	SD of logged Data	1.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.71	95% Adjusted-CLT UCL (Chen-1995)	24
		95% Modified-t UCL (Johnson-1978)	22.24

Nonparametric Distribution Free UCLs

95% CLT UCL	20.56	95% Jackknife UCL	21.71
95% Standard Bootstrap UCL	19.89	95% Bootstrap-t UCL	39.4
95% Hall's Bootstrap UCL	48.28	95% Percentile Bootstrap UCL	20.59
95% BCA Bootstrap UCL	22.15		
90% Chebyshev(Mean, Sd) UCL	27.81	95% Chebyshev(Mean, Sd) UCL	35.09
97.5% Chebyshev(Mean, Sd) UCL	45.19	99% Chebyshev(Mean, Sd) UCL	65.03

Suggested UCL to Use

95% Hall's Bootstrap UCL	48.28

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.85	Mean	3.789
Maximum	8.09	Median	3.215
SD	1.665	Std. Error of Mean	0.555
Coefficient of Variation	0.44	Skewness	2.683
Mean of logged Data	1.274	SD of logged Data	0.328

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.821	95% Adjusted-CLT UCL (Chen-1995)	5.232
		95% Modified-t UCL (Johnson-1978)	4.904

Nonparametric Distribution Free UCLs

95% CLT UCL	4.702	95% Jackknife UCL	4.821
95% Standard Bootstrap UCL	4.64	95% Bootstrap-t UCL	11.27
95% Hall's Bootstrap UCL	10.44	95% Percentile Bootstrap UCL	4.83
95% BCA Bootstrap UCL	5.347		
90% Chebyshev(Mean, Sd) UCL	5.454	95% Chebyshev(Mean, Sd) UCL	6.209
97.5% Chebyshev(Mean, Sd) UCL	7.256	99% Chebyshev(Mean, Sd) UCL	9.312

Suggested UCL to Use

95% Student's-t UCL	4.821	or 95% Modified-t UCL	4.904

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	26.49
Maximum	121	Median	4.97
SD	41.18	Std. Error of Mean	13.73
Coefficient of Variation	1.554	Skewness	1.892
Mean of logged Data	2.134	SD of logged Data	1.599

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.02	95% Adjusted-CLT UCL (Chen-1995)	58.32
		95% Modified-t UCL (Johnson-1978)	53.46

Nonparametric Distribution Free UCLs

95% CLT UCL	49.07	95% Jackknife UCL	52.02
95% Standard Bootstrap UCL	46.84	95% Bootstrap-t UCL	108
95% Hall's Bootstrap UCL	128.5	95% Percentile Bootstrap UCL	49.69
95% BCA Bootstrap UCL	56.19		
90% Chebyshev(Mean, Sd) UCL	67.67	95% Chebyshev(Mean, Sd) UCL	86.32
97.5% Chebyshev(Mean, Sd) UCL	112.2	99% Chebyshev(Mean, Sd) UCL	163.1

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.19	Mean	2.212
Maximum	9.74	Median	1.29
SD	2.824	Std. Error of Mean	0.941
Coefficient of Variation	1.277	Skewness	2.998
Mean of logged Data	0.465	SD of logged Data	0.68

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.962	95% Adjusted-CLT UCL (Chen-1995)	4.765
		95% Modified-t UCL (Johnson-1978)	4.119

Nonparametric Distribution Free UCLs

95% CLT UCL	3.76	95% Jackknife UCL	3.962
95% Standard Bootstrap UCL	3.703	95% Bootstrap-t UCL	73.87
95% Hall's Bootstrap UCL	47.26	95% Percentile Bootstrap UCL	4.091
95% BCA Bootstrap UCL	5.021		
90% Chebyshev(Mean, Sd) UCL	5.035	95% Chebyshev(Mean, Sd) UCL	6.314
97.5% Chebyshev(Mean, Sd) UCL	8.089	99% Chebyshev(Mean, Sd) UCL	11.58

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.314

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.28	Mean	9.513
Maximum	35.2	Median	3.135
SD	11.44	Std. Error of Mean	3.813
Coefficient of Variation	1.202	Skewness	1.776
Mean of logged Data	1.724	SD of logged Data	1.02

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.6	95% Adjusted-CLT UCL (Chen-1995)	18.2
		95% Modified-t UCL (Johnson-1978)	16.98

Nonparametric Distribution Free UCLs

95% CLT UCL	15.79	95% Jackknife UCL	16.6
95% Standard Bootstrap UCL	15.3	95% Bootstrap-t UCL	29.43
95% Hall's Bootstrap UCL	34.64	95% Percentile Bootstrap UCL	16.1
95% BCA Bootstrap UCL	17.59		
90% Chebyshev(Mean, Sd) UCL	20.95	95% Chebyshev(Mean, Sd) UCL	26.13
97.5% Chebyshev(Mean, Sd) UCL	33.33	99% Chebyshev(Mean, Sd) UCL	47.45

Suggested UCL to Use

95% Hall's Bootstrap UCL	34.64

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	0.792	Mean	1.63
Maximum	3.17	Median	1.12
SD	0.949	Std. Error of Mean	0.316
Coefficient of Variation	0.583	Skewness	0.872
Mean of logged Data	0.35	SD of logged Data	0.543

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.218	95% Adjusted-CLT UCL (Chen-1995)	2.248
		95% Modified-t UCL (Johnson-1978)	2.233

Nonparametric Distribution Free UCLs

95% CLT UCL	2.15	95% Jackknife UCL	2.218
95% Standard Bootstrap UCL	2.104	95% Bootstrap-t UCL	2.36
95% Hall's Bootstrap UCL	1.972	95% Percentile Bootstrap UCL	2.111
95% BCA Bootstrap UCL	2.151		
90% Chebyshev(Mean, Sd) UCL	2.579	95% Chebyshev(Mean, Sd) UCL	3.009
97.5% Chebyshev(Mean, Sd) UCL	3.606	99% Chebyshev(Mean, Sd) UCL	4.779

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	22.31
Maximum	114	Median	3.325
SD	37.32	Std. Error of Mean	12.44
Coefficient of Variation	1.673	Skewness	2.305
Mean of logged Data	2.102	SD of logged Data	1.391

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.44	95% Adjusted-CLT UCL (Chen-1995)	52.98
		95% Modified-t UCL (Johnson-1978)	47.04

Nonparametric Distribution Free UCLs

95% CLT UCL	42.77	95% Jackknife UCL	45.44
95% Standard Bootstrap UCL	41.81	95% Bootstrap-t UCL	144.6

95% Hall's Bootstrap UCL	167.3	95% Percentile Bootstrap UCL	42.53
95% BCA Bootstrap UCL	54.65		
90% Chebyshev(Mean, Sd) UCL	59.63	95% Chebyshev(Mean, Sd) UCL	76.54
97.5% Chebyshev(Mean, Sd) UCL	100	99% Chebyshev(Mean, Sd) UCL	146.1

Suggested UCL to Use

95% Hall's Bootstrap UCL	167.3

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	22.34
Maximum	100	Median	4.47
SD	33.58	Std. Error of Mean	11.19
Coefficient of Variation	1.503	Skewness	1.923
Mean of logged Data	2.157	SD of logged Data	1.4

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.16	95% Adjusted-CLT UCL (Chen-1995)	48.42
		95% Modified-t UCL (Johnson-1978)	44.35

Nonparametric Distribution Free UCLs

95% CLT UCL	40.75	95% Jackknife UCL	43.16
95% Standard Bootstrap UCL	39.49	95% Bootstrap-t UCL	87.19
95% Hall's Bootstrap UCL	103.1	95% Percentile Bootstrap UCL	41.03
95% BCA Bootstrap UCL	49.11		
90% Chebyshev(Mean, Sd) UCL	55.92	95% Chebyshev(Mean, Sd) UCL	71.13
97.5% Chebyshev(Mean, Sd) UCL	92.24	99% Chebyshev(Mean, Sd) UCL	133.7

Suggested UCL to Use

95% Hall's Bootstrap UCL	103.1

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:26:37 PM
From File	38002F_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.2	Mean	12.83
Maximum	14.5	Median	13
SD	1.142	Std. Error of Mean	0.381
Coefficient of Variation	0.089	Skewness	0.0947
Mean of logged Data	2.549	SD of logged Data	0.0891

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.54	95% Adjusted-CLT UCL (Chen-1995)	13.47
		95% Modified-t UCL (Johnson-1978)	13.54

Nonparametric Distribution Free UCLs

95% CLT UCL	13.46	95% Jackknife UCL	13.54
95% Standard Bootstrap UCL	13.42	95% Bootstrap-t UCL	13.58
95% Hall's Bootstrap UCL	13.47	95% Percentile Bootstrap UCL	13.42
95% BCA Bootstrap UCL	13.42		
90% Chebyshev(Mean, Sd) UCL	13.98	95% Chebyshev(Mean, Sd) UCL	14.49
97.5% Chebyshev(Mean, Sd) UCL	15.21	99% Chebyshev(Mean, Sd) UCL	16.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.3	Mean	12.16
Maximum	13.5	Median	12
SD	0.641	Std. Error of Mean	0.214
Coefficient of Variation	0.0527	Skewness	0.952
Mean of logged Data	2.497	SD of logged Data	0.0518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.55	95% Adjusted-CLT UCL (Chen-1995)	12.58
		95% Modified-t UCL (Johnson-1978)	12.56

Nonparametric Distribution Free UCLs

95% CLT UCL	12.51	95% Jackknife UCL	12.55
95% Standard Bootstrap UCL	12.48	95% Bootstrap-t UCL	12.67
95% Hall's Bootstrap UCL	12.88	95% Percentile Bootstrap UCL	12.48
95% BCA Bootstrap UCL	12.56		
90% Chebyshev(Mean, Sd) UCL	12.8	95% Chebyshev(Mean, Sd) UCL	13.09
97.5% Chebyshev(Mean, Sd) UCL	13.49	99% Chebyshev(Mean, Sd) UCL	14.28

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.5	Mean	48.84
Maximum	53.6	Median	49.4
SD	2.878	Std. Error of Mean	0.959
Coefficient of Variation	0.0589	Skewness	0.208
Mean of logged Data	3.887	SD of logged Data	0.0588

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.63	95% Adjusted-CLT UCL (Chen-1995)	50.49
		95% Modified-t UCL (Johnson-1978)	50.64

Nonparametric Distribution Free UCLs

95% CLT UCL	50.42	95% Jackknife UCL	50.63
95% Standard Bootstrap UCL	50.33	95% Bootstrap-t UCL	50.76
95% Hall's Bootstrap UCL	50.42	95% Percentile Bootstrap UCL	50.4
95% BCA Bootstrap UCL	50.33		
90% Chebyshev(Mean, Sd) UCL	51.72	95% Chebyshev(Mean, Sd) UCL	53.03
97.5% Chebyshev(Mean, Sd) UCL	54.84	99% Chebyshev(Mean, Sd) UCL	58.39

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.779	Mean	1.319
Maximum	2.28	Median	1.03
SD	0.57	Std. Error of Mean	0.19
Coefficient of Variation	0.433	Skewness	0.87
Mean of logged Data	0.2	SD of logged Data	0.404

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.672	95% Adjusted-CLT UCL (Chen-1995)	1.69
		95% Modified-t UCL (Johnson-1978)	1.681

Nonparametric Distribution Free UCLs

95% CLT UCL	1.631	95% Jackknife UCL	1.672
95% Standard Bootstrap UCL	1.616	95% Bootstrap-t UCL	1.757
95% Hall's Bootstrap UCL	1.549	95% Percentile Bootstrap UCL	1.611
95% BCA Bootstrap UCL	1.674		
90% Chebyshev(Mean, Sd) UCL	1.889	95% Chebyshev(Mean, Sd) UCL	2.148
97.5% Chebyshev(Mean, Sd) UCL	2.506	99% Chebyshev(Mean, Sd) UCL	3.211

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.505	Mean	0.522
Maximum	0.559	Median	0.515
SD	0.0172	Std. Error of Mean	0.00574
Coefficient of Variation	0.033	Skewness	1.378
Mean of logged Data	-0.651	SD of logged Data	0.0325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.532	95% Adjusted-CLT UCL (Chen-1995)	0.534
		95% Modified-t UCL (Johnson-1978)	0.533

Nonparametric Distribution Free UCLs

95% CLT UCL	0.531	95% Jackknife UCL	0.532
95% Standard Bootstrap UCL	0.531	95% Bootstrap-t UCL	0.539
95% Hall's Bootstrap UCL	0.574	95% Percentile Bootstrap UCL	0.531
95% BCA Bootstrap UCL	0.533		
90% Chebyshev(Mean, Sd) UCL	0.539	95% Chebyshev(Mean, Sd) UCL	0.547
97.5% Chebyshev(Mean, Sd) UCL	0.557	99% Chebyshev(Mean, Sd) UCL	0.579

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	2.095
Maximum	2.165	Median	2.085
SD	0.0397	Std. Error of Mean	0.0132
Coefficient of Variation	0.0189	Skewness	0.677
Mean of logged Data	0.739	SD of logged Data	0.0189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.12	95% Adjusted-CLT UCL (Chen-1995)	2.12
		95% Modified-t UCL (Johnson-1978)	2.12

Nonparametric Distribution Free UCLs

95% CLT UCL	2.117	95% Jackknife UCL	2.12
95% Standard Bootstrap UCL	2.116	95% Bootstrap-t UCL	2.125
95% Hall's Bootstrap UCL	2.117	95% Percentile Bootstrap UCL	2.116
95% BCA Bootstrap UCL	2.117		
90% Chebyshev(Mean, Sd) UCL	2.135	95% Chebyshev(Mean, Sd) UCL	2.153
97.5% Chebyshev(Mean, Sd) UCL	2.178	99% Chebyshev(Mean, Sd) UCL	2.227

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.78	Mean	2.379
Maximum	3.87	Median	2.08
SD	0.697	Std. Error of Mean	0.232
Coefficient of Variation	0.293	Skewness	1.716
Mean of logged Data	0.835	SD of logged Data	0.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.811	95% Adjusted-CLT UCL (Chen-1995)	2.903
		95% Modified-t UCL (Johnson-1978)	2.833

Nonparametric Distribution Free UCLs

95% CLT UCL	2.761	95% Jackknife UCL	2.811
95% Standard Bootstrap UCL	2.739	95% Bootstrap-t UCL	4.416
95% Hall's Bootstrap UCL	6.695	95% Percentile Bootstrap UCL	2.781
95% BCA Bootstrap UCL	2.855		
90% Chebyshev(Mean, Sd) UCL	3.076	95% Chebyshev(Mean, Sd) UCL	3.392
97.5% Chebyshev(Mean, Sd) UCL	3.831	99% Chebyshev(Mean, Sd) UCL	4.692

Suggested UCL to Use

95% Student's-t UCL	2.811	or 95% Modified-t UCL	2.833

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	2.095
Maximum	2.165	Median	2.085
SD	0.0397	Std. Error of Mean	0.0132
Coefficient of Variation	0.0189	Skewness	0.677
Mean of logged Data	0.739	SD of logged Data	0.0189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.12	95% Adjusted-CLT UCL (Chen-1995)	2.12
		95% Modified-t UCL (Johnson-1978)	2.12

Nonparametric Distribution Free UCLs

95% CLT UCL	2.117	95% Jackknife UCL	2.12
95% Standard Bootstrap UCL	2.116	95% Bootstrap-t UCL	2.126
95% Hall's Bootstrap UCL	2.117	95% Percentile Bootstrap UCL	2.116
95% BCA Bootstrap UCL	2.117		
90% Chebyshev(Mean, Sd) UCL	2.135	95% Chebyshev(Mean, Sd) UCL	2.153
97.5% Chebyshev(Mean, Sd) UCL	2.178	99% Chebyshev(Mean, Sd) UCL	2.227

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	3.812
Maximum	5.63	Median	3.205
SD	1.048	Std. Error of Mean	0.349
Coefficient of Variation	0.275	Skewness	1.47
Mean of logged Data	1.309	SD of logged Data	0.244

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.462	95% Adjusted-CLT UCL (Chen-1995)	4.57
		95% Modified-t UCL (Johnson-1978)	4.491

Nonparametric Distribution Free UCLs

95% CLT UCL	4.387	95% Jackknife UCL	4.462
95% Standard Bootstrap UCL	4.352	95% Bootstrap-t UCL	6.428
95% Hall's Bootstrap UCL	7.538	95% Percentile Bootstrap UCL	4.375
95% BCA Bootstrap UCL	4.587		
90% Chebyshev(Mean, Sd) UCL	4.861	95% Chebyshev(Mean, Sd) UCL	5.336
97.5% Chebyshev(Mean, Sd) UCL	5.995	99% Chebyshev(Mean, Sd) UCL	7.29

Suggested UCL to Use

95% Student's-t UCL	4.462	or 95% Modified-t UCL	4.491

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.35	Mean	3.164
Maximum	3.6	Median	3.205
SD	0.335	Std. Error of Mean	0.112
Coefficient of Variation	0.106	Skewness	-1.912
Mean of logged Data	1.146	SD of logged Data	0.117

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.372	95% Adjusted-CLT UCL (Chen-1995)	3.272
		95% Modified-t UCL (Johnson-1978)	3.36

Nonparametric Distribution Free UCLs

95% CLT UCL	3.348	95% Jackknife UCL	3.372
95% Standard Bootstrap UCL	3.335	95% Bootstrap-t UCL	3.307
95% Hall's Bootstrap UCL	3.292	95% Percentile Bootstrap UCL	3.314
95% BCA Bootstrap UCL	3.295		
90% Chebyshev(Mean, Sd) UCL	3.499	95% Chebyshev(Mean, Sd) UCL	3.651
97.5% Chebyshev(Mean, Sd) UCL	3.862	99% Chebyshev(Mean, Sd) UCL	4.277

Suggested UCL to Use

95% Student's-t UCL	3.372	or 95% Modified-t UCL	3.36

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	2.309
Maximum	3.99	Median	2.085
SD	0.632	Std. Error of Mean	0.211
Coefficient of Variation	0.274	Skewness	2.972
Mean of logged Data	0.813	SD of logged Data	0.215

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.701	95% Adjusted-CLT UCL (Chen-1995)	2.879

		95% Modified-t UCL (Johnson-1978)	2.736

Nonparametric Distribution Free UCLs

95% CLT UCL	2.656	95% Jackknife UCL	2.701
95% Standard Bootstrap UCL	2.636	95% Bootstrap-t UCL	6.106
95% Hall's Bootstrap UCL	4.871	95% Percentile Bootstrap UCL	2.724
95% BCA Bootstrap UCL	2.922		
90% Chebyshev(Mean, Sd) UCL	2.941	95% Chebyshev(Mean, Sd) UCL	3.227
97.5% Chebyshev(Mean, Sd) UCL	3.625	99% Chebyshev(Mean, Sd) UCL	4.405

Suggested UCL to Use

95% Student's-t UCL	2.701	or 95% Modified-t UCL	2.736

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	2.678
Maximum	4.81	Median	2.085
SD	1.03	Std. Error of Mean	0.343
Coefficient of Variation	0.385	Skewness	1.594
Mean of logged Data	0.932	SD of logged Data	0.329

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.316	95% Adjusted-CLT UCL (Chen-1995)	3.437
		95% Modified-t UCL (Johnson-1978)	3.347

Nonparametric Distribution Free UCLs

95% CLT UCL	3.242	95% Jackknife UCL	3.316
95% Standard Bootstrap UCL	3.208	95% Bootstrap-t UCL	4.985
95% Hall's Bootstrap UCL	5.996	95% Percentile Bootstrap UCL	3.219
95% BCA Bootstrap UCL	3.407		
90% Chebyshev(Mean, Sd) UCL	3.708	95% Chebyshev(Mean, Sd) UCL	4.174
97.5% Chebyshev(Mean, Sd) UCL	4.822	99% Chebyshev(Mean, Sd) UCL	6.094

Suggested UCL to Use

95% Student's-t UCL	3.316	or 95% Modified-t UCL	3.347

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.99	Mean	3.193
Maximum	3.335	Median	3.205
SD	0.096	Std. Error of Mean	0.032
Coefficient of Variation	0.0301	Skewness	-0.865
Mean of logged Data	1.16	SD of logged Data	0.0304

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.252	95% Adjusted-CLT UCL (Chen-1995)	3.236
		95% Modified-t UCL (Johnson-1978)	3.251

Nonparametric Distribution Free UCLs

95% CLT UCL	3.245	95% Jackknife UCL	3.252
95% Standard Bootstrap UCL	3.242	95% Bootstrap-t UCL	3.245
95% Hall's Bootstrap UCL	3.245	95% Percentile Bootstrap UCL	3.239
95% BCA Bootstrap UCL	3.233		
90% Chebyshev(Mean, Sd) UCL	3.289	95% Chebyshev(Mean, Sd) UCL	3.332
97.5% Chebyshev(Mean, Sd) UCL	3.393	99% Chebyshev(Mean, Sd) UCL	3.511

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	3.024
Maximum	6.99	Median	2.085
SD	1.679	Std. Error of Mean	0.56
Coefficient of Variation	0.555	Skewness	1.994
Mean of logged Data	1.005	SD of logged Data	0.443

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.065	95% Adjusted-CLT UCL (Chen-1995)	4.343
		95% Modified-t UCL (Johnson-1978)	4.127

Nonparametric Distribution Free UCLs

95% CLT UCL	3.945	95% Jackknife UCL	4.065
95% Standard Bootstrap UCL	3.891	95% Bootstrap-t UCL	5.508
95% Hall's Bootstrap UCL	6.553	95% Percentile Bootstrap UCL	3.956
95% BCA Bootstrap UCL	4.331		
90% Chebyshev(Mean, Sd) UCL	4.704	95% Chebyshev(Mean, Sd) UCL	5.465
97.5% Chebyshev(Mean, Sd) UCL	6.52	99% Chebyshev(Mean, Sd) UCL	8.594

Suggested UCL to Use

95% Student's-t UCL	4.065	or 95% Modified-t UCL	4.127

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.26	Mean	1.289
Maximum	1.335	Median	1.285
SD	0.0253	Std. Error of Mean	0.00843
Coefficient of Variation	0.0196	Skewness	0.708
Mean of logged Data	0.254	SD of logged Data	0.0195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.305	95% Adjusted-CLT UCL (Chen-1995)	1.305
		95% Modified-t UCL (Johnson-1978)	1.305

Nonparametric Distribution Free UCLs

95% CLT UCL	1.303	95% Jackknife UCL	1.305
95% Standard Bootstrap UCL	1.303	95% Bootstrap-t UCL	1.309
95% Hall's Bootstrap UCL	1.305	95% Percentile Bootstrap UCL	1.303
95% BCA Bootstrap UCL	1.304		
90% Chebyshev(Mean, Sd) UCL	1.315	95% Chebyshev(Mean, Sd) UCL	1.326
97.5% Chebyshev(Mean, Sd) UCL	1.342	99% Chebyshev(Mean, Sd) UCL	1.373

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7

		Number of Missing Observations	0
Minimum	3.15	Mean	3.365
Maximum	4.58	Median	3.205
SD	0.46	Std. Error of Mean	0.153
Coefficient of Variation	0.137	Skewness	2.905
Mean of logged Data	1.206	SD of logged Data	0.12

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.65	95% Adjusted-CLT UCL (Chen-1995)	3.775
		95% Modified-t UCL (Johnson-1978)	3.675

Nonparametric Distribution Free UCLs

95% CLT UCL	3.617	95% Jackknife UCL	3.65
95% Standard Bootstrap UCL	3.6	95% Bootstrap-t UCL	5.314
95% Hall's Bootstrap UCL	4.717	95% Percentile Bootstrap UCL	3.659
95% BCA Bootstrap UCL	3.804		
90% Chebyshev(Mean, Sd) UCL	3.825	95% Chebyshev(Mean, Sd) UCL	4.033
97.5% Chebyshev(Mean, Sd) UCL	4.322	99% Chebyshev(Mean, Sd) UCL	4.889

Suggested UCL to Use

95% Student's-t UCL	3.65	or 95% Modified-t UCL	3.675

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.51	Mean	2.423
Maximum	3.92	Median	1.95
SD	1.026	Std. Error of Mean	0.342
Coefficient of Variation	0.424	Skewness	0.791
Mean of logged Data	0.811	SD of logged Data	0.397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.06	95% Adjusted-CLT UCL (Chen-1995)	3.083
		95% Modified-t UCL (Johnson-1978)	3.075

Nonparametric Distribution Free UCLs

95% CLT UCL	2.986	95% Jackknife UCL	3.06
95% Standard Bootstrap UCL	2.962	95% Bootstrap-t UCL	3.157

95% Hall's Bootstrap UCL	2.793	95% Percentile Bootstrap UCL	2.943
95% BCA Bootstrap UCL	3.093		
90% Chebyshev(Mean, Sd) UCL	3.45	95% Chebyshev(Mean, Sd) UCL	3.915
97.5% Chebyshev(Mean, Sd) UCL	4.56	99% Chebyshev(Mean, Sd) UCL	5.828

Suggested UCL to Use

95% Student's-t UCL	3.06	or 95% Modified-t UCL	3.075

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	3.286
Maximum	3.77	Median	3.205
SD	0.192	Std. Error of Mean	0.0639
Coefficient of Variation	0.0584	Skewness	2.435
Mean of logged Data	1.188	SD of logged Data	0.0555

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.405	95% Adjusted-CLT UCL (Chen-1995)	3.447
		95% Modified-t UCL (Johnson-1978)	3.414

Nonparametric Distribution Free UCLs

95% CLT UCL	3.391	95% Jackknife UCL	3.405
95% Standard Bootstrap UCL	3.386	95% Bootstrap-t UCL	3.604
95% Hall's Bootstrap UCL	3.798	95% Percentile Bootstrap UCL	3.402
95% BCA Bootstrap UCL	3.438		
90% Chebyshev(Mean, Sd) UCL	3.478	95% Chebyshev(Mean, Sd) UCL	3.565
97.5% Chebyshev(Mean, Sd) UCL	3.685	99% Chebyshev(Mean, Sd) UCL	3.922

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	3.607
Maximum	6.1	Median	3.205
SD	0.954	Std. Error of Mean	0.318

Coefficient of Variation	0.265	Skewness	2.79
Mean of logged Data	1.259	SD of logged Data	0.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.198	95% Adjusted-CLT UCL (Chen-1995)	4.446
		95% Modified-t UCL (Johnson-1978)	4.247

Nonparametric Distribution Free UCLs

95% CLT UCL	4.13	95% Jackknife UCL	4.198
95% Standard Bootstrap UCL	4.104	95% Bootstrap-t UCL	8.212
95% Hall's Bootstrap UCL	6.631	95% Percentile Bootstrap UCL	4.196
95% BCA Bootstrap UCL	4.519		
90% Chebyshev(Mean, Sd) UCL	4.561	95% Chebyshev(Mean, Sd) UCL	4.993
97.5% Chebyshev(Mean, Sd) UCL	5.593	99% Chebyshev(Mean, Sd) UCL	6.771

Suggested UCL to Use

95% Student's-t UCL	4.198	or 95% Modified-t UCL	4.247

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:30:52 PM
From File	38002G_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.8	Mean	13.07
Maximum	14.3	Median	12.6
SD	0.906	Std. Error of Mean	0.302
Coefficient of Variation	0.0693	Skewness	0.156
Mean of logged Data	2.568	SD of logged Data	0.0692

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.63	95% Adjusted-CLT UCL (Chen-1995)	13.58
		95% Modified-t UCL (Johnson-1978)	13.63

Nonparametric Distribution Free UCLs

95% CLT UCL	13.56	95% Jackknife UCL	13.63
95% Standard Bootstrap UCL	13.54	95% Bootstrap-t UCL	13.6
95% Hall's Bootstrap UCL	13.48	95% Percentile Bootstrap UCL	13.53
95% BCA Bootstrap UCL	13.56		
90% Chebyshev(Mean, Sd) UCL	13.97	95% Chebyshev(Mean, Sd) UCL	14.38
97.5% Chebyshev(Mean, Sd) UCL	14.95	99% Chebyshev(Mean, Sd) UCL	16.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.7	Mean	11.78
Maximum	13.7	Median	11.7
SD	0.858	Std. Error of Mean	0.286
Coefficient of Variation	0.0729	Skewness	1.319
Mean of logged Data	2.464	SD of logged Data	0.0707

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.31	95% Adjusted-CLT UCL (Chen-1995)	12.38
		95% Modified-t UCL (Johnson-1978)	12.33

Nonparametric Distribution Free UCLs

95% CLT UCL	12.25	95% Jackknife UCL	12.31
95% Standard Bootstrap UCL	12.23	95% Bootstrap-t UCL	12.46
95% Hall's Bootstrap UCL	14.85	95% Percentile Bootstrap UCL	12.22
95% BCA Bootstrap UCL	12.32		
90% Chebyshev(Mean, Sd) UCL	12.64	95% Chebyshev(Mean, Sd) UCL	13.03
97.5% Chebyshev(Mean, Sd) UCL	13.56	99% Chebyshev(Mean, Sd) UCL	14.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	44.9	Mean	49.48
Maximum	55	Median	49.3
SD	3.103	Std. Error of Mean	1.034
Coefficient of Variation	0.0627	Skewness	0.471
Mean of logged Data	3.9	SD of logged Data	0.0622

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.4	95% Adjusted-CLT UCL (Chen-1995)	51.35
		95% Modified-t UCL (Johnson-1978)	51.43

Nonparametric Distribution Free UCLs

95% CLT UCL	51.18	95% Jackknife UCL	51.4
95% Standard Bootstrap UCL	51.07	95% Bootstrap-t UCL	51.74
95% Hall's Bootstrap UCL	52.48	95% Percentile Bootstrap UCL	51.08
95% BCA Bootstrap UCL	51.16		
90% Chebyshev(Mean, Sd) UCL	52.58	95% Chebyshev(Mean, Sd) UCL	53.99
97.5% Chebyshev(Mean, Sd) UCL	55.94	99% Chebyshev(Mean, Sd) UCL	59.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.696	Mean	1.185
Maximum	2.25	Median	0.94
SD	0.563	Std. Error of Mean	0.188
Coefficient of Variation	0.475	Skewness	1.043
Mean of logged Data	0.0795	SD of logged Data	0.437

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.533	95% Adjusted-CLT UCL (Chen-1995)	1.563
		95% Modified-t UCL (Johnson-1978)	1.544

Nonparametric Distribution Free UCLs

95% CLT UCL	1.493	95% Jackknife UCL	1.533
95% Standard Bootstrap UCL	1.475	95% Bootstrap-t UCL	1.666
95% Hall's Bootstrap UCL	1.446	95% Percentile Bootstrap UCL	1.474
95% BCA Bootstrap UCL	1.54		
90% Chebyshev(Mean, Sd) UCL	1.747	95% Chebyshev(Mean, Sd) UCL	2.002
97.5% Chebyshev(Mean, Sd) UCL	2.356	99% Chebyshev(Mean, Sd) UCL	3.05

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.477	Mean	0.512
Maximum	0.53	Median	0.515
SD	0.0177	Std. Error of Mean	0.0059
Coefficient of Variation	0.0346	Skewness	-0.885
Mean of logged Data	-0.669	SD of logged Data	0.035

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.523	95% Adjusted-CLT UCL (Chen-1995)	0.52
		95% Modified-t UCL (Johnson-1978)	0.523

Nonparametric Distribution Free UCLs

95% CLT UCL	0.522	95% Jackknife UCL	0.523
95% Standard Bootstrap UCL	0.522	95% Bootstrap-t UCL	0.522
95% Hall's Bootstrap UCL	0.521	95% Percentile Bootstrap UCL	0.521
95% BCA Bootstrap UCL	0.52		
90% Chebyshev(Mean, Sd) UCL	0.53	95% Chebyshev(Mean, Sd) UCL	0.538
97.5% Chebyshev(Mean, Sd) UCL	0.549	99% Chebyshev(Mean, Sd) UCL	0.571

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.94	Mean	2.086
Maximum	2.16	Median	2.1
SD	0.071	Std. Error of Mean	0.0237
Coefficient of Variation	0.0341	Skewness	-0.992
Mean of logged Data	0.735	SD of logged Data	0.0346

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.13	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.128

Nonparametric Distribution Free UCLs

95% CLT UCL	2.125	95% Jackknife UCL	2.13
95% Standard Bootstrap UCL	2.122	95% Bootstrap-t UCL	2.122
95% Hall's Bootstrap UCL	2.118	95% Percentile Bootstrap UCL	2.121
95% BCA Bootstrap UCL	2.117		
90% Chebyshev(Mean, Sd) UCL	2.157	95% Chebyshev(Mean, Sd) UCL	2.189
97.5% Chebyshev(Mean, Sd) UCL	2.233	99% Chebyshev(Mean, Sd) UCL	2.321

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.94	Mean	2.086
Maximum	2.16	Median	2.1
SD	0.071	Std. Error of Mean	0.0237
Coefficient of Variation	0.0341	Skewness	-0.992
Mean of logged Data	0.735	SD of logged Data	0.0346

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.13	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.128

Nonparametric Distribution Free UCLs

95% CLT UCL	2.125	95% Jackknife UCL	2.13
95% Standard Bootstrap UCL	2.122	95% Bootstrap-t UCL	2.123
95% Hall's Bootstrap UCL	2.117	95% Percentile Bootstrap UCL	2.121
95% BCA Bootstrap UCL	2.116		
90% Chebyshev(Mean, Sd) UCL	2.157	95% Chebyshev(Mean, Sd) UCL	2.189
97.5% Chebyshev(Mean, Sd) UCL	2.233	99% Chebyshev(Mean, Sd) UCL	2.321

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.94	Mean	2.086
Maximum	2.16	Median	2.1
SD	0.071	Std. Error of Mean	0.0237
Coefficient of Variation	0.0341	Skewness	-0.992
Mean of logged Data	0.735	SD of logged Data	0.0346

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.13	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.128

Nonparametric Distribution Free UCLs

95% CLT UCL	2.125	95% Jackknife UCL	2.13
95% Standard Bootstrap UCL	2.123	95% Bootstrap-t UCL	2.122
95% Hall's Bootstrap UCL	2.119	95% Percentile Bootstrap UCL	2.121
95% BCA Bootstrap UCL	2.114		
90% Chebyshev(Mean, Sd) UCL	2.157	95% Chebyshev(Mean, Sd) UCL	2.189
97.5% Chebyshev(Mean, Sd) UCL	2.233	99% Chebyshev(Mean, Sd) UCL	2.321

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.5	Mean	3.072
Maximum	3.325	Median	3.17
SD	0.314	Std. Error of Mean	0.105
Coefficient of Variation	0.102	Skewness	-1.449
Mean of logged Data	1.117	SD of logged Data	0.109

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.267	95% Adjusted-CLT UCL (Chen-1995)	3.19
		95% Modified-t UCL (Johnson-1978)	3.259

Nonparametric Distribution Free UCLs

95% CLT UCL	3.245	95% Jackknife UCL	3.267
95% Standard Bootstrap UCL	3.235	95% Bootstrap-t UCL	3.214
95% Hall's Bootstrap UCL	3.19	95% Percentile Bootstrap UCL	3.229
95% BCA Bootstrap UCL	3.2		
90% Chebyshev(Mean, Sd) UCL	3.387	95% Chebyshev(Mean, Sd) UCL	3.529
97.5% Chebyshev(Mean, Sd) UCL	3.727	99% Chebyshev(Mean, Sd) UCL	4.115

Suggested UCL to Use

95% Student's-t UCL	3.267	or 95% Modified-t UCL	3.259

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.98	Mean	3.208
Maximum	3.325	Median	3.23
SD	0.11	Std. Error of Mean	0.0366
Coefficient of Variation	0.0343	Skewness	-1.047
Mean of logged Data	1.165	SD of logged Data	0.0348

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.276	95% Adjusted-CLT UCL (Chen-1995)	3.255
		95% Modified-t UCL (Johnson-1978)	3.274

Nonparametric Distribution Free UCLs

95% CLT UCL	3.269	95% Jackknife UCL	3.276
95% Standard Bootstrap UCL	3.265	95% Bootstrap-t UCL	3.265
95% Hall's Bootstrap UCL	3.257	95% Percentile Bootstrap UCL	3.263
95% BCA Bootstrap UCL	3.255		
90% Chebyshev(Mean, Sd) UCL	3.318	95% Chebyshev(Mean, Sd) UCL	3.368
97.5% Chebyshev(Mean, Sd) UCL	3.437	99% Chebyshev(Mean, Sd) UCL	3.573

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.94	Mean	2.086

Maximum	2.16	Median	2.1
SD	0.071	Std. Error of Mean	0.0237
Coefficient of Variation	0.0341	Skewness	-0.992
Mean of logged Data	0.735	SD of logged Data	0.0346

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.13	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.128

Nonparametric Distribution Free UCLs

95% CLT UCL	2.125	95% Jackknife UCL	2.13
95% Standard Bootstrap UCL	2.122	95% Bootstrap-t UCL	2.123
95% Hall's Bootstrap UCL	2.118	95% Percentile Bootstrap UCL	2.119
95% BCA Bootstrap UCL	2.117		
90% Chebyshev(Mean, Sd) UCL	2.157	95% Chebyshev(Mean, Sd) UCL	2.189
97.5% Chebyshev(Mean, Sd) UCL	2.233	99% Chebyshev(Mean, Sd) UCL	2.321

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	2.1
Maximum	2.16	Median	2.11
SD	0.0424	Std. Error of Mean	0.0141
Coefficient of Variation	0.0202	Skewness	-0.0365
Mean of logged Data	0.742	SD of logged Data	0.0202

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.126	95% Adjusted-CLT UCL (Chen-1995)	2.123
		95% Modified-t UCL (Johnson-1978)	2.126

Nonparametric Distribution Free UCLs

95% CLT UCL	2.123	95% Jackknife UCL	2.126

95% Standard Bootstrap UCL	2.121	95% Bootstrap-t UCL	2.125
95% Hall's Bootstrap UCL	2.125	95% Percentile Bootstrap UCL	2.122
95% BCA Bootstrap UCL	2.122		
90% Chebyshev(Mean, Sd) UCL	2.142	95% Chebyshev(Mean, Sd) UCL	2.162
97.5% Chebyshev(Mean, Sd) UCL	2.188	99% Chebyshev(Mean, Sd) UCL	2.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.98	Mean	3.208
Maximum	3.325	Median	3.23
SD	0.11	Std. Error of Mean	0.0366
Coefficient of Variation	0.0343	Skewness	-1.047
Mean of logged Data	1.165	SD of logged Data	0.0348

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.276	95% Adjusted-CLT UCL (Chen-1995)	3.255
		95% Modified-t UCL (Johnson-1978)	3.274

Nonparametric Distribution Free UCLs

95% CLT UCL	3.269	95% Jackknife UCL	3.276
95% Standard Bootstrap UCL	3.265	95% Bootstrap-t UCL	3.262
95% Hall's Bootstrap UCL	3.257	95% Percentile Bootstrap UCL	3.261
95% BCA Bootstrap UCL	3.258		
90% Chebyshev(Mean, Sd) UCL	3.318	95% Chebyshev(Mean, Sd) UCL	3.368
97.5% Chebyshev(Mean, Sd) UCL	3.437	99% Chebyshev(Mean, Sd) UCL	3.573

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.035	Mean	2.467
Maximum	3.69	Median	2.155
SD	0.619	Std. Error of Mean	0.206
Coefficient of Variation	0.251	Skewness	1.432
Mean of logged Data	0.878	SD of logged Data	0.226

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.85	95% Adjusted-CLT UCL (Chen-1995)	2.911
		95% Modified-t UCL (Johnson-1978)	2.867

Nonparametric Distribution Free UCLs

95% CLT UCL	2.806	95% Jackknife UCL	2.85
95% Standard Bootstrap UCL	2.78	95% Bootstrap-t UCL	3.524
95% Hall's Bootstrap UCL	3.12	95% Percentile Bootstrap UCL	2.796
95% BCA Bootstrap UCL	2.85		
90% Chebyshev(Mean, Sd) UCL	3.086	95% Chebyshev(Mean, Sd) UCL	3.366
97.5% Chebyshev(Mean, Sd) UCL	3.756	99% Chebyshev(Mean, Sd) UCL	4.52

Suggested UCL to Use

95% Student's-t UCL	2.85	or 95% Modified-t UCL	2.867

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.195	Mean	1.284
Maximum	1.33	Median	1.29
SD	0.0426	Std. Error of Mean	0.0142
Coefficient of Variation	0.0332	Skewness	-1.064
Mean of logged Data	0.249	SD of logged Data	0.0337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.31	95% Adjusted-CLT UCL (Chen-1995)	1.302
		95% Modified-t UCL (Johnson-1978)	1.309

Nonparametric Distribution Free UCLs

95% CLT UCL	1.307	95% Jackknife UCL	1.31
95% Standard Bootstrap UCL	1.306	95% Bootstrap-t UCL	1.305
95% Hall's Bootstrap UCL	1.304	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.301		
90% Chebyshev(Mean, Sd) UCL	1.327	95% Chebyshev(Mean, Sd) UCL	1.346
97.5% Chebyshev(Mean, Sd) UCL	1.373	99% Chebyshev(Mean, Sd) UCL	1.425

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.98	Mean	3.208
Maximum	3.325	Median	3.23
SD	0.11	Std. Error of Mean	0.0366
Coefficient of Variation	0.0343	Skewness	-1.047
Mean of logged Data	1.165	SD of logged Data	0.0348

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.276	95% Adjusted-CLT UCL (Chen-1995)	3.255
		95% Modified-t UCL (Johnson-1978)	3.274

Nonparametric Distribution Free UCLs

95% CLT UCL	3.269	95% Jackknife UCL	3.276
95% Standard Bootstrap UCL	3.264	95% Bootstrap-t UCL	3.264
95% Hall's Bootstrap UCL	3.259	95% Percentile Bootstrap UCL	3.263
95% BCA Bootstrap UCL	3.252		
90% Chebyshev(Mean, Sd) UCL	3.318	95% Chebyshev(Mean, Sd) UCL	3.368
97.5% Chebyshev(Mean, Sd) UCL	3.437	99% Chebyshev(Mean, Sd) UCL	3.573

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.824	Mean	1.574
Maximum	2.75	Median	1.08
SD	0.871	Std. Error of Mean	0.29
Coefficient of Variation	0.554	Skewness	0.747
Mean of logged Data	0.325	SD of logged Data	0.526

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.114	95% Adjusted-CLT UCL (Chen-1995)	2.129
		95% Modified-t UCL (Johnson-1978)	2.126

Nonparametric Distribution Free UCLs

95% CLT UCL	2.052	95% Jackknife UCL	2.114
95% Standard Bootstrap UCL	2.016	95% Bootstrap-t UCL	2.192
95% Hall's Bootstrap UCL	1.886	95% Percentile Bootstrap UCL	2.024
95% BCA Bootstrap UCL	2.131		
90% Chebyshev(Mean, Sd) UCL	2.445	95% Chebyshev(Mean, Sd) UCL	2.84
97.5% Chebyshev(Mean, Sd) UCL	3.387	99% Chebyshev(Mean, Sd) UCL	4.463

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.91	Mean	3.209
Maximum	3.38	Median	3.23
SD	0.139	Std. Error of Mean	0.0462
Coefficient of Variation	0.0432	Skewness	-1.172
Mean of logged Data	1.165	SD of logged Data	0.0441

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.295	95% Adjusted-CLT UCL (Chen-1995)	3.266

		95% Modified-t UCL (Johnson-1978)	3.292

Nonparametric Distribution Free UCLs

95% CLT UCL	3.285	95% Jackknife UCL	3.295
95% Standard Bootstrap UCL	3.278	95% Bootstrap-t UCL	3.278
95% Hall's Bootstrap UCL	3.275	95% Percentile Bootstrap UCL	3.276
95% BCA Bootstrap UCL	3.265		
90% Chebyshev(Mean, Sd) UCL	3.347	95% Chebyshev(Mean, Sd) UCL	3.41
97.5% Chebyshev(Mean, Sd) UCL	3.497	99% Chebyshev(Mean, Sd) UCL	3.668

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.31	Mean	3.086
Maximum	3.325	Median	3.17
SD	0.318	Std. Error of Mean	0.106
Coefficient of Variation	0.103	Skewness	-2.21
Mean of logged Data	1.121	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.282	95% Adjusted-CLT UCL (Chen-1995)	3.176
		95% Modified-t UCL (Johnson-1978)	3.269

Nonparametric Distribution Free UCLs

95% CLT UCL	3.26	95% Jackknife UCL	3.282
95% Standard Bootstrap UCL	3.249	95% Bootstrap-t UCL	3.225
95% Hall's Bootstrap UCL	3.205	95% Percentile Bootstrap UCL	3.226
95% BCA Bootstrap UCL	3.208		
90% Chebyshev(Mean, Sd) UCL	3.403	95% Chebyshev(Mean, Sd) UCL	3.547
97.5% Chebyshev(Mean, Sd) UCL	3.747	99% Chebyshev(Mean, Sd) UCL	4.139

Suggested UCL to Use

95% Student's-t UCL	3.282	or 95% Modified-t UCL	3.269

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:32:02 PM
From File	38002H_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.8	Mean	11.77
Maximum	12.4	Median	11.9
SD	0.566	Std. Error of Mean	0.189
Coefficient of Variation	0.0481	Skewness	-0.974
Mean of logged Data	2.464	SD of logged Data	0.049

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.12	95% Adjusted-CLT UCL (Chen-1995)	12.01
		95% Modified-t UCL (Johnson-1978)	12.11

Nonparametric Distribution Free UCLs

95% CLT UCL	12.08	95% Jackknife UCL	12.12
95% Standard Bootstrap UCL	12.05	95% Bootstrap-t UCL	12.06
95% Hall's Bootstrap UCL	12.01	95% Percentile Bootstrap UCL	12.06
95% BCA Bootstrap UCL	12		
90% Chebyshev(Mean, Sd) UCL	12.33	95% Chebyshev(Mean, Sd) UCL	12.59
97.5% Chebyshev(Mean, Sd) UCL	12.94	99% Chebyshev(Mean, Sd) UCL	13.64

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.77	Mean	11.26
Maximum	13.7	Median	11.3
SD	1.127	Std. Error of Mean	0.376
Coefficient of Variation	0.1	Skewness	1.026

Mean of logged Data	2.417	SD of logged Data	0.0973

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.96	95% Adjusted-CLT UCL (Chen-1995)	12.02
		95% Modified-t UCL (Johnson-1978)	11.98

Nonparametric Distribution Free UCLs

95% CLT UCL	11.88	95% Jackknife UCL	11.96
95% Standard Bootstrap UCL	11.85	95% Bootstrap-t UCL	12.07
95% Hall's Bootstrap UCL	12.89	95% Percentile Bootstrap UCL	11.82
95% BCA Bootstrap UCL	12		
90% Chebyshev(Mean, Sd) UCL	12.39	95% Chebyshev(Mean, Sd) UCL	12.9
97.5% Chebyshev(Mean, Sd) UCL	13.61	99% Chebyshev(Mean, Sd) UCL	15

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.2	Mean	45.31
Maximum	48.1	Median	46
SD	2.553	Std. Error of Mean	0.851
Coefficient of Variation	0.0563	Skewness	-1.229
Mean of logged Data	3.812	SD of logged Data	0.058

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.89	95% Adjusted-CLT UCL (Chen-1995)	46.34
		95% Modified-t UCL (Johnson-1978)	46.84

Nonparametric Distribution Free UCLs

95% CLT UCL	46.71	95% Jackknife UCL	46.89
95% Standard Bootstrap UCL	46.64	95% Bootstrap-t UCL	46.59
95% Hall's Bootstrap UCL	46.35	95% Percentile Bootstrap UCL	46.61
95% BCA Bootstrap UCL	46.46		
90% Chebyshev(Mean, Sd) UCL	47.86	95% Chebyshev(Mean, Sd) UCL	49.02
97.5% Chebyshev(Mean, Sd) UCL	50.62	99% Chebyshev(Mean, Sd) UCL	53.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.719	Mean	0.877
Maximum	0.97	Median	0.885
SD	0.0852	Std. Error of Mean	0.0284
Coefficient of Variation	0.0972	Skewness	-1.021
Mean of logged Data	-0.136	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.93	95% Adjusted-CLT UCL (Chen-1995)	0.913
		95% Modified-t UCL (Johnson-1978)	0.928

Nonparametric Distribution Free UCLs

95% CLT UCL	0.924	95% Jackknife UCL	0.93
95% Standard Bootstrap UCL	0.92	95% Bootstrap-t UCL	0.92
95% Hall's Bootstrap UCL	0.915	95% Percentile Bootstrap UCL	0.918
95% BCA Bootstrap UCL	0.912		
90% Chebyshev(Mean, Sd) UCL	0.962	95% Chebyshev(Mean, Sd) UCL	1.001
97.5% Chebyshev(Mean, Sd) UCL	1.054	99% Chebyshev(Mean, Sd) UCL	1.159

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.473	Mean	0.498
Maximum	0.53	Median	0.49

SD	0.023	Std. Error of Mean	0.00767
Coefficient of Variation	0.0462	Skewness	0.187
Mean of logged Data	-0.697	SD of logged Data	0.0461

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.513	95% Adjusted-CLT UCL (Chen-1995)	0.511
		95% Modified-t UCL (Johnson-1978)	0.513

Nonparametric Distribution Free UCLs

95% CLT UCL	0.511	95% Jackknife UCL	0.513
95% Standard Bootstrap UCL	0.51	95% Bootstrap-t UCL	0.513
95% Hall's Bootstrap UCL	0.508	95% Percentile Bootstrap UCL	0.51
95% BCA Bootstrap UCL	0.511		
90% Chebyshev(Mean, Sd) UCL	0.521	95% Chebyshev(Mean, Sd) UCL	0.532
97.5% Chebyshev(Mean, Sd) UCL	0.546	99% Chebyshev(Mean, Sd) UCL	0.575

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.026
Maximum	2.15	Median	1.99
SD	0.0931	Std. Error of Mean	0.031
Coefficient of Variation	0.0459	Skewness	0.144
Mean of logged Data	0.705	SD of logged Data	0.0459

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.083	95% Adjusted-CLT UCL (Chen-1995)	2.078
		95% Modified-t UCL (Johnson-1978)	2.083

Nonparametric Distribution Free UCLs

95% CLT UCL	2.077	95% Jackknife UCL	2.083
95% Standard Bootstrap UCL	2.074	95% Bootstrap-t UCL	2.084
95% Hall's Bootstrap UCL	2.066	95% Percentile Bootstrap UCL	2.075
95% BCA Bootstrap UCL	2.074		
90% Chebyshev(Mean, Sd) UCL	2.119	95% Chebyshev(Mean, Sd) UCL	2.161

97.5% Chebyshev(Mean, Sd) UCL	2.219	99% Chebyshev(Mean, Sd) UCL	2.334

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.084
Maximum	2.66	Median	1.99
SD	0.232	Std. Error of Mean	0.0773
Coefficient of Variation	0.111	Skewness	2.288
Mean of logged Data	0.73	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.228	95% Adjusted-CLT UCL (Chen-1995)	2.274
		95% Modified-t UCL (Johnson-1978)	2.238

Nonparametric Distribution Free UCLs

95% CLT UCL	2.212	95% Jackknife UCL	2.228
95% Standard Bootstrap UCL	2.204	95% Bootstrap-t UCL	2.41
95% Hall's Bootstrap UCL	2.696	95% Percentile Bootstrap UCL	2.208
95% BCA Bootstrap UCL	2.283		
90% Chebyshev(Mean, Sd) UCL	2.316	95% Chebyshev(Mean, Sd) UCL	2.421
97.5% Chebyshev(Mean, Sd) UCL	2.567	99% Chebyshev(Mean, Sd) UCL	2.853

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.026
Maximum	2.15	Median	1.99
SD	0.0931	Std. Error of Mean	0.031
Coefficient of Variation	0.0459	Skewness	0.144
Mean of logged Data	0.705	SD of logged Data	0.0459

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.083	95% Adjusted-CLT UCL (Chen-1995)	2.078
		95% Modified-t UCL (Johnson-1978)	2.083

Nonparametric Distribution Free UCLs

95% CLT UCL	2.077	95% Jackknife UCL	2.083
95% Standard Bootstrap UCL	2.073	95% Bootstrap-t UCL	2.086
95% Hall's Bootstrap UCL	2.066	95% Percentile Bootstrap UCL	2.071
95% BCA Bootstrap UCL	2.079		
90% Chebyshev(Mean, Sd) UCL	2.119	95% Chebyshev(Mean, Sd) UCL	2.161
97.5% Chebyshev(Mean, Sd) UCL	2.219	99% Chebyshev(Mean, Sd) UCL	2.334

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.56	Mean	3.178
Maximum	4.73	Median	3.055
SD	0.616	Std. Error of Mean	0.205
Coefficient of Variation	0.194	Skewness	2.356
Mean of logged Data	1.142	SD of logged Data	0.17

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.56	95% Adjusted-CLT UCL (Chen-1995)	3.689
		95% Modified-t UCL (Johnson-1978)	3.587

Nonparametric Distribution Free UCLs

95% CLT UCL	3.516	95% Jackknife UCL	3.56
95% Standard Bootstrap UCL	3.489	95% Bootstrap-t UCL	4.007
95% Hall's Bootstrap UCL	5.076	95% Percentile Bootstrap UCL	3.542
95% BCA Bootstrap UCL	3.654		
90% Chebyshev(Mean, Sd) UCL	3.795	95% Chebyshev(Mean, Sd) UCL	4.074
97.5% Chebyshev(Mean, Sd) UCL	4.462	99% Chebyshev(Mean, Sd) UCL	5.223

Suggested UCL to Use

95% Student's-t UCL	3.56	or 95% Modified-t UCL	3.587

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.78	Mean	3.061
Maximum	3.31	Median	3.055
SD	0.168	Std. Error of Mean	0.0561
Coefficient of Variation	0.055	Skewness	-0.0101
Mean of logged Data	1.117	SD of logged Data	0.0551

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.165	95% Adjusted-CLT UCL (Chen-1995)	3.153
		95% Modified-t UCL (Johnson-1978)	3.165

Nonparametric Distribution Free UCLs

95% CLT UCL	3.153	95% Jackknife UCL	3.165
95% Standard Bootstrap UCL	3.147	95% Bootstrap-t UCL	3.165
95% Hall's Bootstrap UCL	3.161	95% Percentile Bootstrap UCL	3.149
95% BCA Bootstrap UCL	3.147		
90% Chebyshev(Mean, Sd) UCL	3.229	95% Chebyshev(Mean, Sd) UCL	3.305
97.5% Chebyshev(Mean, Sd) UCL	3.411	99% Chebyshev(Mean, Sd) UCL	3.619

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.101
Maximum	2.81	Median	1.99
SD	0.279	Std. Error of Mean	0.093
Coefficient of Variation	0.133	Skewness	2.499
Mean of logged Data	0.736	SD of logged Data	0.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.274	95% Adjusted-CLT UCL (Chen-1995)	2.337
		95% Modified-t UCL (Johnson-1978)	2.287

Nonparametric Distribution Free UCLs

95% CLT UCL	2.254	95% Jackknife UCL	2.274
95% Standard Bootstrap UCL	2.25	95% Bootstrap-t UCL	2.559
95% Hall's Bootstrap UCL	2.836	95% Percentile Bootstrap UCL	2.259
95% BCA Bootstrap UCL	2.344		
90% Chebyshev(Mean, Sd) UCL	2.38	95% Chebyshev(Mean, Sd) UCL	2.506
97.5% Chebyshev(Mean, Sd) UCL	2.682	99% Chebyshev(Mean, Sd) UCL	3.026

Suggested UCL to Use

95% Student's-t UCL	2.274	or 95% Modified-t UCL	2.287

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.248
Maximum	3.87	Median	2.095
SD	0.616	Std. Error of Mean	0.205
Coefficient of Variation	0.274	Skewness	2.852
Mean of logged Data	0.785	SD of logged Data	0.218

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.63	95% Adjusted-CLT UCL (Chen-1995)	2.794
		95% Modified-t UCL (Johnson-1978)	2.662

Nonparametric Distribution Free UCLs

95% CLT UCL	2.586	95% Jackknife UCL	2.63
95% Standard Bootstrap UCL	2.568	95% Bootstrap-t UCL	3.843
95% Hall's Bootstrap UCL	4.115	95% Percentile Bootstrap UCL	2.637
95% BCA Bootstrap UCL	2.839		
90% Chebyshev(Mean, Sd) UCL	2.864	95% Chebyshev(Mean, Sd) UCL	3.143
97.5% Chebyshev(Mean, Sd) UCL	3.531	99% Chebyshev(Mean, Sd) UCL	4.292

Suggested UCL to Use

95% Student's-t UCL	2.63	or 95% Modified-t UCL	2.662

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.95	Mean	3.116
Maximum	3.31	Median	3.06
SD	0.145	Std. Error of Mean	0.0483
Coefficient of Variation	0.0465	Skewness	0.146
Mean of logged Data	1.136	SD of logged Data	0.0465

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.206	95% Adjusted-CLT UCL (Chen-1995)	3.198
		95% Modified-t UCL (Johnson-1978)	3.206

Nonparametric Distribution Free UCLs

95% CLT UCL	3.196	95% Jackknife UCL	3.206
95% Standard Bootstrap UCL	3.191	95% Bootstrap-t UCL	3.213
95% Hall's Bootstrap UCL	3.178	95% Percentile Bootstrap UCL	3.19
95% BCA Bootstrap UCL	3.193		
90% Chebyshev(Mean, Sd) UCL	3.261	95% Chebyshev(Mean, Sd) UCL	3.327
97.5% Chebyshev(Mean, Sd) UCL	3.418	99% Chebyshev(Mean, Sd) UCL	3.597

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.92	Mean	2.43
Maximum	4.35	Median	2.095
SD	0.808	Std. Error of Mean	0.269
Coefficient of Variation	0.332	Skewness	2.08
Mean of logged Data	0.849	SD of logged Data	0.277

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.931	95% Adjusted-CLT UCL (Chen-1995)	3.072
		95% Modified-t UCL (Johnson-1978)	2.962

Nonparametric Distribution Free UCLs

95% CLT UCL	2.873	95% Jackknife UCL	2.931
95% Standard Bootstrap UCL	2.847	95% Bootstrap-t UCL	4.25
95% Hall's Bootstrap UCL	4.626	95% Percentile Bootstrap UCL	2.884
95% BCA Bootstrap UCL	3.125		
90% Chebyshev(Mean, Sd) UCL	3.238	95% Chebyshev(Mean, Sd) UCL	3.603
97.5% Chebyshev(Mean, Sd) UCL	4.111	99% Chebyshev(Mean, Sd) UCL	5.108

Suggested UCL to Use

95% Student's-t UCL	2.931	or 95% Modified-t UCL	2.962

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.18	Mean	1.247
Maximum	1.325	Median	1.225
SD	0.0589	Std. Error of Mean	0.0196
Coefficient of Variation	0.0472	Skewness	0.148
Mean of logged Data	0.22	SD of logged Data	0.0471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.284	95% Adjusted-CLT UCL (Chen-1995)	1.281
		95% Modified-t UCL (Johnson-1978)	1.284

Nonparametric Distribution Free UCLs

95% CLT UCL	1.28	95% Jackknife UCL	1.284
95% Standard Bootstrap UCL	1.278	95% Bootstrap-t UCL	1.285
95% Hall's Bootstrap UCL	1.274	95% Percentile Bootstrap UCL	1.278
95% BCA Bootstrap UCL	1.279		
90% Chebyshev(Mean, Sd) UCL	1.306	95% Chebyshev(Mean, Sd) UCL	1.333
97.5% Chebyshev(Mean, Sd) UCL	1.37	99% Chebyshev(Mean, Sd) UCL	1.443

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.95	Mean	3.104
Maximum	3.31	Median	3.06
SD	0.134	Std. Error of Mean	0.0446
Coefficient of Variation	0.0431	Skewness	0.254
Mean of logged Data	1.132	SD of logged Data	0.0429

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.187	95% Adjusted-CLT UCL (Chen-1995)	3.181
		95% Modified-t UCL (Johnson-1978)	3.187

Nonparametric Distribution Free UCLs

95% CLT UCL	3.177	95% Jackknife UCL	3.187
95% Standard Bootstrap UCL	3.173	95% Bootstrap-t UCL	3.193
95% Hall's Bootstrap UCL	3.169	95% Percentile Bootstrap UCL	3.172
95% BCA Bootstrap UCL	3.174		
90% Chebyshev(Mean, Sd) UCL	3.238	95% Chebyshev(Mean, Sd) UCL	3.298
97.5% Chebyshev(Mean, Sd) UCL	3.382	99% Chebyshev(Mean, Sd) UCL	3.547

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.741	Mean	1.329
Maximum	2.41	Median	0.965
SD	0.665	Std. Error of Mean	0.222
Coefficient of Variation	0.5	Skewness	0.909
Mean of logged Data	0.184	SD of logged Data	0.46

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1.741	95% Adjusted-CLT UCL (Chen-1995)	1.765
		95% Modified-t UCL (Johnson-1978)	1.752

Nonparametric Distribution Free UCLs

95% CLT UCL	1.693	95% Jackknife UCL	1.741
95% Standard Bootstrap UCL	1.672	95% Bootstrap-t UCL	1.887
95% Hall's Bootstrap UCL	1.567	95% Percentile Bootstrap UCL	1.681
95% BCA Bootstrap UCL	1.723		
90% Chebyshev(Mean, Sd) UCL	1.994	95% Chebyshev(Mean, Sd) UCL	2.295
97.5% Chebyshev(Mean, Sd) UCL	2.712	99% Chebyshev(Mean, Sd) UCL	3.533

Suggested UCL to Use

95% Student's-t UCL	1.741	or 95% Modified-t UCL	1.752

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.26	Mean	3.003
Maximum	3.31	Median	3.055
SD	0.308	Std. Error of Mean	0.103
Coefficient of Variation	0.103	Skewness	-1.97
Mean of logged Data	1.094	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.194	95% Adjusted-CLT UCL (Chen-1995)	3.1
		95% Modified-t UCL (Johnson-1978)	3.182

Nonparametric Distribution Free UCLs

95% CLT UCL	3.172	95% Jackknife UCL	3.194
95% Standard Bootstrap UCL	3.163	95% Bootstrap-t UCL	3.134
95% Hall's Bootstrap UCL	3.12	95% Percentile Bootstrap UCL	3.139
95% BCA Bootstrap UCL	3.12		
90% Chebyshev(Mean, Sd) UCL	3.311	95% Chebyshev(Mean, Sd) UCL	3.45
97.5% Chebyshev(Mean, Sd) UCL	3.644	99% Chebyshev(Mean, Sd) UCL	4.024

Suggested UCL to Use

95% Student's-t UCL	3.194	or 95% Modified-t UCL	3.182

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.24	Mean	3.018
Maximum	3.8	Median	3.055
SD	0.426	Std. Error of Mean	0.142
Coefficient of Variation	0.141	Skewness	-0.0541
Mean of logged Data	1.096	SD of logged Data	0.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.282	95% Adjusted-CLT UCL (Chen-1995)	3.249
		95% Modified-t UCL (Johnson-1978)	3.282

Nonparametric Distribution Free UCLs

95% CLT UCL	3.252	95% Jackknife UCL	3.282
95% Standard Bootstrap UCL	3.235	95% Bootstrap-t UCL	3.278
95% Hall's Bootstrap UCL	3.311	95% Percentile Bootstrap UCL	3.231
95% BCA Bootstrap UCL	3.239		
90% Chebyshev(Mean, Sd) UCL	3.444	95% Chebyshev(Mean, Sd) UCL	3.637
97.5% Chebyshev(Mean, Sd) UCL	3.905	99% Chebyshev(Mean, Sd) UCL	4.431

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:33:23 PM
From File	38002l_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.6	Mean	15.83
Maximum	17.6	Median	17.1
SD	2.152	Std. Error of Mean	0.717
Coefficient of Variation	0.136	Skewness	-0.82
Mean of logged Data	2.753	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.17	95% Adjusted-CLT UCL (Chen-1995)	16.8
		95% Modified-t UCL (Johnson-1978)	17.13

Nonparametric Distribution Free UCLs

95% CLT UCL	17.01	95% Jackknife UCL	17.17
95% Standard Bootstrap UCL	16.94	95% Bootstrap-t UCL	16.98
95% Hall's Bootstrap UCL	16.69	95% Percentile Bootstrap UCL	16.87
95% BCA Bootstrap UCL	16.82		
90% Chebyshev(Mean, Sd) UCL	17.99	95% Chebyshev(Mean, Sd) UCL	18.96
97.5% Chebyshev(Mean, Sd) UCL	20.31	99% Chebyshev(Mean, Sd) UCL	22.97

Suggested UCL to Use

95% Student's-t UCL	17.17	or 95% Modified-t UCL	17.13

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.6	Mean	24.18
Maximum	65.3	Median	14.5
SD	19.98	Std. Error of Mean	6.659
Coefficient of Variation	0.826	Skewness	1.708

Mean of logged Data	2.967	SD of logged Data	0.635

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.56	95% Adjusted-CLT UCL (Chen-1995)	39.18
		95% Modified-t UCL (Johnson-1978)	37.19

Nonparametric Distribution Free UCLs

95% CLT UCL	35.13	95% Jackknife UCL	36.56
95% Standard Bootstrap UCL	34.44	95% Bootstrap-t UCL	151.7
95% Hall's Bootstrap UCL	115.4	95% Percentile Bootstrap UCL	35.43
95% BCA Bootstrap UCL	37.49		
90% Chebyshev(Mean, Sd) UCL	44.15	95% Chebyshev(Mean, Sd) UCL	53.2
97.5% Chebyshev(Mean, Sd) UCL	65.76	99% Chebyshev(Mean, Sd) UCL	90.43

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	53.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.7	Mean	55.08
Maximum	61.3	Median	57.7
SD	5.746	Std. Error of Mean	1.915
Coefficient of Variation	0.104	Skewness	-0.667
Mean of logged Data	4.004	SD of logged Data	0.108

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.64	95% Adjusted-CLT UCL (Chen-1995)	57.77
		95% Modified-t UCL (Johnson-1978)	58.57

Nonparametric Distribution Free UCLs

95% CLT UCL	58.23	95% Jackknife UCL	58.64
95% Standard Bootstrap UCL	58.07	95% Bootstrap-t UCL	58.09
95% Hall's Bootstrap UCL	57.41	95% Percentile Bootstrap UCL	57.89
95% BCA Bootstrap UCL	57.73		
90% Chebyshev(Mean, Sd) UCL	60.82	95% Chebyshev(Mean, Sd) UCL	63.43
97.5% Chebyshev(Mean, Sd) UCL	67.04	99% Chebyshev(Mean, Sd) UCL	74.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.925	Mean	1.142
Maximum	1.57	Median	1.05
SD	0.239	Std. Error of Mean	0.0795
Coefficient of Variation	0.209	Skewness	0.901
Mean of logged Data	0.115	SD of logged Data	0.199

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.29	95% Adjusted-CLT UCL (Chen-1995)	1.299
		95% Modified-t UCL (Johnson-1978)	1.294

Nonparametric Distribution Free UCLs

95% CLT UCL	1.273	95% Jackknife UCL	1.29
95% Standard Bootstrap UCL	1.265	95% Bootstrap-t UCL	1.34
95% Hall's Bootstrap UCL	1.263	95% Percentile Bootstrap UCL	1.271
95% BCA Bootstrap UCL	1.294		
90% Chebyshev(Mean, Sd) UCL	1.381	95% Chebyshev(Mean, Sd) UCL	1.489
97.5% Chebyshev(Mean, Sd) UCL	1.639	99% Chebyshev(Mean, Sd) UCL	1.934

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.424	Mean	0.522
Maximum	0.705	Median	0.51
SD	0.0749	Std. Error of Mean	0.025
Coefficient of Variation	0.144	Skewness	1.99
Mean of logged Data	-0.659	SD of logged Data	0.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.568	95% Adjusted-CLT UCL (Chen-1995)	0.58
		95% Modified-t UCL (Johnson-1978)	0.571

Nonparametric Distribution Free UCLs

95% CLT UCL	0.563	95% Jackknife UCL	0.568
95% Standard Bootstrap UCL	0.56	95% Bootstrap-t UCL	0.618
95% Hall's Bootstrap UCL	0.778	95% Percentile Bootstrap UCL	0.563
95% BCA Bootstrap UCL	0.576		
90% Chebyshev(Mean, Sd) UCL	0.596	95% Chebyshev(Mean, Sd) UCL	0.63
97.5% Chebyshev(Mean, Sd) UCL	0.678	99% Chebyshev(Mean, Sd) UCL	0.77

Suggested UCL to Use

95% Student's-t UCL	0.568	or 95% Modified-t UCL	0.571

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.01	Mean	2.064
Maximum	2.13	Median	2.06
SD	0.0449	Std. Error of Mean	0.015
Coefficient of Variation	0.0218	Skewness	0.249
Mean of logged Data	0.724	SD of logged Data	0.0217

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.092	95% Adjusted-CLT UCL (Chen-1995)	2.09
		95% Modified-t UCL (Johnson-1978)	2.092

Nonparametric Distribution Free UCLs

95% CLT UCL	2.089	95% Jackknife UCL	2.092
95% Standard Bootstrap UCL	2.087	95% Bootstrap-t UCL	2.095
95% Hall's Bootstrap UCL	2.086	95% Percentile Bootstrap UCL	2.088
95% BCA Bootstrap UCL	2.087		
90% Chebyshev(Mean, Sd) UCL	2.109	95% Chebyshev(Mean, Sd) UCL	2.129
97.5% Chebyshev(Mean, Sd) UCL	2.157	99% Chebyshev(Mean, Sd) UCL	2.213

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	3.084
Maximum	5.47	Median	2.34
SD	1.274	Std. Error of Mean	0.425
Coefficient of Variation	0.413	Skewness	0.86
Mean of logged Data	1.056	SD of logged Data	0.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.874	95% Adjusted-CLT UCL (Chen-1995)	3.913
		95% Modified-t UCL (Johnson-1978)	3.894

Nonparametric Distribution Free UCLs

95% CLT UCL	3.783	95% Jackknife UCL	3.874
95% Standard Bootstrap UCL	3.731	95% Bootstrap-t UCL	4.139
95% Hall's Bootstrap UCL	3.743	95% Percentile Bootstrap UCL	3.772
95% BCA Bootstrap UCL	3.867		
90% Chebyshev(Mean, Sd) UCL	4.358	95% Chebyshev(Mean, Sd) UCL	4.935
97.5% Chebyshev(Mean, Sd) UCL	5.736	99% Chebyshev(Mean, Sd) UCL	7.309

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.73	Mean	3.938
Maximum	7.36	Median	2.73
SD	2.395	Std. Error of Mean	0.798
Coefficient of Variation	0.608	Skewness	0.675
Mean of logged Data	1.208	SD of logged Data	0.598

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.423	95% Adjusted-CLT UCL (Chen-1995)	5.443
		95% Modified-t UCL (Johnson-1978)	5.453

Nonparametric Distribution Free UCLs

95% CLT UCL	5.252	95% Jackknife UCL	5.423
95% Standard Bootstrap UCL	5.196	95% Bootstrap-t UCL	5.69
95% Hall's Bootstrap UCL	4.888	95% Percentile Bootstrap UCL	5.236
95% BCA Bootstrap UCL	5.389		
90% Chebyshev(Mean, Sd) UCL	6.334	95% Chebyshev(Mean, Sd) UCL	7.419
97.5% Chebyshev(Mean, Sd) UCL	8.924	99% Chebyshev(Mean, Sd) UCL	11.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	5.349
Maximum	10.6	Median	3.34
SD	2.917	Std. Error of Mean	0.972
Coefficient of Variation	0.545	Skewness	0.94
Mean of logged Data	1.556	SD of logged Data	0.508

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.157	95% Adjusted-CLT UCL (Chen-1995)	7.274
		95% Modified-t UCL (Johnson-1978)	7.208

Nonparametric Distribution Free UCLs

95% CLT UCL	6.948	95% Jackknife UCL	7.157
95% Standard Bootstrap UCL	6.813	95% Bootstrap-t UCL	7.772
95% Hall's Bootstrap UCL	6.746	95% Percentile Bootstrap UCL	6.981
95% BCA Bootstrap UCL	7.126		
90% Chebyshev(Mean, Sd) UCL	8.265	95% Chebyshev(Mean, Sd) UCL	9.587
97.5% Chebyshev(Mean, Sd) UCL	11.42	99% Chebyshev(Mean, Sd) UCL	15.02

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.587

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.25	Mean	3.648
Maximum	5.68	Median	3.195
SD	1.062	Std. Error of Mean	0.354
Coefficient of Variation	0.291	Skewness	0.93
Mean of logged Data	1.259	SD of logged Data	0.279

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.306	95% Adjusted-CLT UCL (Chen-1995)	4.348
		95% Modified-t UCL (Johnson-1978)	4.325

Nonparametric Distribution Free UCLs

95% CLT UCL	4.23	95% Jackknife UCL	4.306
95% Standard Bootstrap UCL	4.188	95% Bootstrap-t UCL	4.651
95% Hall's Bootstrap UCL	4.561	95% Percentile Bootstrap UCL	4.213
95% BCA Bootstrap UCL	4.287		
90% Chebyshev(Mean, Sd) UCL	4.71	95% Chebyshev(Mean, Sd) UCL	5.191
97.5% Chebyshev(Mean, Sd) UCL	5.859	99% Chebyshev(Mean, Sd) UCL	7.172

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.01	Mean	2.533
Maximum	4.28	Median	2.11
SD	0.788	Std. Error of Mean	0.263
Coefficient of Variation	0.311	Skewness	1.656
Mean of logged Data	0.894	SD of logged Data	0.272

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.022	95% Adjusted-CLT UCL (Chen-1995)	3.12
		95% Modified-t UCL (Johnson-1978)	3.046

Nonparametric Distribution Free UCLs

95% CLT UCL	2.965	95% Jackknife UCL	3.022
95% Standard Bootstrap UCL	2.942	95% Bootstrap-t UCL	3.496
95% Hall's Bootstrap UCL	3.076	95% Percentile Bootstrap UCL	2.942
95% BCA Bootstrap UCL	3.094		
90% Chebyshev(Mean, Sd) UCL	3.321	95% Chebyshev(Mean, Sd) UCL	3.678
97.5% Chebyshev(Mean, Sd) UCL	4.173	99% Chebyshev(Mean, Sd) UCL	5.146

Suggested UCL to Use

95% Student's-t UCL	3.022	or 95% Modified-t UCL	3.046

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	4
Maximum	7.78	Median	2.46
SD	2.486	Std. Error of Mean	0.829
Coefficient of Variation	0.621	Skewness	0.758
Mean of logged Data	1.222	SD of logged Data	0.597

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.541	95% Adjusted-CLT UCL (Chen-1995)	5.587
		95% Modified-t UCL (Johnson-1978)	5.576

Nonparametric Distribution Free UCLs

95% CLT UCL	5.363	95% Jackknife UCL	5.541
95% Standard Bootstrap UCL	5.261	95% Bootstrap-t UCL	5.902
95% Hall's Bootstrap UCL	5.006	95% Percentile Bootstrap UCL	5.347
95% BCA Bootstrap UCL	5.564		
90% Chebyshev(Mean, Sd) UCL	6.486	95% Chebyshev(Mean, Sd) UCL	7.612
97.5% Chebyshev(Mean, Sd) UCL	9.175	99% Chebyshev(Mean, Sd) UCL	12.24

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.09	Mean	3.176
Maximum	3.275	Median	3.17
SD	0.0701	Std. Error of Mean	0.0234
Coefficient of Variation	0.0221	Skewness	0.198
Mean of logged Data	1.155	SD of logged Data	0.022

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.22	95% Adjusted-CLT UCL (Chen-1995)	3.216
		95% Modified-t UCL (Johnson-1978)	3.22

Nonparametric Distribution Free UCLs

95% CLT UCL	3.215	95% Jackknife UCL	3.22
95% Standard Bootstrap UCL	3.212	95% Bootstrap-t UCL	3.221
95% Hall's Bootstrap UCL	3.21	95% Percentile Bootstrap UCL	3.213
95% BCA Bootstrap UCL	3.212		
90% Chebyshev(Mean, Sd) UCL	3.246	95% Chebyshev(Mean, Sd) UCL	3.278
97.5% Chebyshev(Mean, Sd) UCL	3.322	99% Chebyshev(Mean, Sd) UCL	3.409

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	5.718
Maximum	10.9	Median	5.12
SD	3.903	Std. Error of Mean	1.301
Coefficient of Variation	0.683	Skewness	0.336
Mean of logged Data	1.497	SD of logged Data	0.772

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.138	95% Adjusted-CLT UCL (Chen-1995)	8.014
		95% Modified-t UCL (Johnson-1978)	8.162

Nonparametric Distribution Free UCLs

95% CLT UCL	7.858	95% Jackknife UCL	8.138
95% Standard Bootstrap UCL	7.746	95% Bootstrap-t UCL	8.356
95% Hall's Bootstrap UCL	7.441	95% Percentile Bootstrap UCL	7.776
95% BCA Bootstrap UCL	7.886		
90% Chebyshev(Mean, Sd) UCL	9.622	95% Chebyshev(Mean, Sd) UCL	11.39
97.5% Chebyshev(Mean, Sd) UCL	13.84	99% Chebyshev(Mean, Sd) UCL	18.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.235	Mean	1.27
Maximum	1.31	Median	1.27
SD	0.0283	Std. Error of Mean	0.00943
Coefficient of Variation	0.0223	Skewness	0.208
Mean of logged Data	0.239	SD of logged Data	0.0222

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.288	95% Adjusted-CLT UCL (Chen-1995)	1.286
		95% Modified-t UCL (Johnson-1978)	1.288

Nonparametric Distribution Free UCLs

95% CLT UCL	1.286	95% Jackknife UCL	1.288
95% Standard Bootstrap UCL	1.285	95% Bootstrap-t UCL	1.289
95% Hall's Bootstrap UCL	1.283	95% Percentile Bootstrap UCL	1.284
95% BCA Bootstrap UCL	1.284		
90% Chebyshev(Mean, Sd) UCL	1.298	95% Chebyshev(Mean, Sd) UCL	1.311
97.5% Chebyshev(Mean, Sd) UCL	1.329	99% Chebyshev(Mean, Sd) UCL	1.364

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	2.88	Mean	3.678
Maximum	5.68	Median	3.195
SD	0.93	Std. Error of Mean	0.31
Coefficient of Variation	0.253	Skewness	1.491
Mean of logged Data	1.278	SD of logged Data	0.228

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.254	95% Adjusted-CLT UCL (Chen-1995)	4.352
		95% Modified-t UCL (Johnson-1978)	4.28

Nonparametric Distribution Free UCLs

95% CLT UCL	4.188	95% Jackknife UCL	4.254
95% Standard Bootstrap UCL	4.164	95% Bootstrap-t UCL	4.636
95% Hall's Bootstrap UCL	4.195	95% Percentile Bootstrap UCL	4.209
95% BCA Bootstrap UCL	4.369		
90% Chebyshev(Mean, Sd) UCL	4.608	95% Chebyshev(Mean, Sd) UCL	5.029
97.5% Chebyshev(Mean, Sd) UCL	5.613	99% Chebyshev(Mean, Sd) UCL	6.761

Suggested UCL to Use

95% Student's-t UCL	4.254	or 95% Modified-t UCL	4.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.55	Mean	2.083
Maximum	2.97	Median	1.72
SD	0.61	Std. Error of Mean	0.203
Coefficient of Variation	0.293	Skewness	0.785
Mean of logged Data	0.699	SD of logged Data	0.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.461	95% Adjusted-CLT UCL (Chen-1995)	2.474
		95% Modified-t UCL (Johnson-1978)	2.47

Nonparametric Distribution Free UCLs

95% CLT UCL	2.418	95% Jackknife UCL	2.461
95% Standard Bootstrap UCL	2.397	95% Bootstrap-t UCL	2.529

95% Hall's Bootstrap UCL	2.304	95% Percentile Bootstrap UCL	2.398
95% BCA Bootstrap UCL	2.471		
90% Chebyshev(Mean, Sd) UCL	2.693	95% Chebyshev(Mean, Sd) UCL	2.969
97.5% Chebyshev(Mean, Sd) UCL	3.352	99% Chebyshev(Mean, Sd) UCL	4.105

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	4.101
Maximum	5.87	Median	3.97
SD	1.078	Std. Error of Mean	0.359
Coefficient of Variation	0.263	Skewness	0.649
Mean of logged Data	1.382	SD of logged Data	0.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.769	95% Adjusted-CLT UCL (Chen-1995)	4.775
		95% Modified-t UCL (Johnson-1978)	4.782

Nonparametric Distribution Free UCLs

95% CLT UCL	4.692	95% Jackknife UCL	4.769
95% Standard Bootstrap UCL	4.658	95% Bootstrap-t UCL	4.903
95% Hall's Bootstrap UCL	4.787	95% Percentile Bootstrap UCL	4.642
95% BCA Bootstrap UCL	4.741		
90% Chebyshev(Mean, Sd) UCL	5.179	95% Chebyshev(Mean, Sd) UCL	5.667
97.5% Chebyshev(Mean, Sd) UCL	6.345	99% Chebyshev(Mean, Sd) UCL	7.676

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	5.637
Maximum	9.98	Median	4.22
SD	2.965	Std. Error of Mean	0.988

Coefficient of Variation	0.526	Skewness	0.652
Mean of logged Data	1.609	SD of logged Data	0.514

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.474	95% Adjusted-CLT UCL (Chen-1995)	7.492
		95% Modified-t UCL (Johnson-1978)	7.51

Nonparametric Distribution Free UCLs

95% CLT UCL	7.262	95% Jackknife UCL	7.474
95% Standard Bootstrap UCL	7.171	95% Bootstrap-t UCL	7.826
95% Hall's Bootstrap UCL	7.006	95% Percentile Bootstrap UCL	7.23
95% BCA Bootstrap UCL	7.405		
90% Chebyshev(Mean, Sd) UCL	8.601	95% Chebyshev(Mean, Sd) UCL	9.944
97.5% Chebyshev(Mean, Sd) UCL	11.81	99% Chebyshev(Mean, Sd) UCL	15.47

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:34:37 PM
From File	38002J_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.6	Mean	20.41
Maximum	47.1	Median	18.2
SD	10.2	Std. Error of Mean	3.398
Coefficient of Variation	0.5	Skewness	2.783
Mean of logged Data	2.944	SD of logged Data	0.362

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.73	95% Adjusted-CLT UCL (Chen-1995)	29.37
		95% Modified-t UCL (Johnson-1978)	27.26

Nonparametric Distribution Free UCLs

95% CLT UCL	26	95% Jackknife UCL	26.73
95% Standard Bootstrap UCL	25.57	95% Bootstrap-t UCL	41.1
95% Hall's Bootstrap UCL	58.58	95% Percentile Bootstrap UCL	26.8
95% BCA Bootstrap UCL	27.92		
90% Chebyshev(Mean, Sd) UCL	30.61	95% Chebyshev(Mean, Sd) UCL	35.22
97.5% Chebyshev(Mean, Sd) UCL	41.63	99% Chebyshev(Mean, Sd) UCL	54.23

Suggested UCL to Use

95% Student's-t UCL	26.73	or 95% Modified-t UCL	27.26

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.9	Mean	25.24
Maximum	91.5	Median	14.1
SD	26.26	Std. Error of Mean	8.755
Coefficient of Variation	1.04	Skewness	2.51
Mean of logged Data	2.948	SD of logged Data	0.686

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.52	95% Adjusted-CLT UCL (Chen-1995)	47.47
		95% Modified-t UCL (Johnson-1978)	42.75

Nonparametric Distribution Free UCLs

95% CLT UCL	39.64	95% Jackknife UCL	41.52
95% Standard Bootstrap UCL	38.81	95% Bootstrap-t UCL	388.3
95% Hall's Bootstrap UCL	181.5	95% Percentile Bootstrap UCL	39.8
95% BCA Bootstrap UCL	45.56		
90% Chebyshev(Mean, Sd) UCL	51.51	95% Chebyshev(Mean, Sd) UCL	63.41
97.5% Chebyshev(Mean, Sd) UCL	79.92	99% Chebyshev(Mean, Sd) UCL	112.4

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	63.41

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	48.6	Mean	58.71
Maximum	66.8	Median	59.9
SD	6.604	Std. Error of Mean	2.201
Coefficient of Variation	0.112	Skewness	-0.589
Mean of logged Data	4.067	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.8	95% Adjusted-CLT UCL (Chen-1995)	61.87
		95% Modified-t UCL (Johnson-1978)	62.73

Nonparametric Distribution Free UCLs

95% CLT UCL	62.33	95% Jackknife UCL	62.8
95% Standard Bootstrap UCL	62.18	95% Bootstrap-t UCL	62.32
95% Hall's Bootstrap UCL	61.82	95% Percentile Bootstrap UCL	62.09
95% BCA Bootstrap UCL	61.64		
90% Chebyshev(Mean, Sd) UCL	65.32	95% Chebyshev(Mean, Sd) UCL	68.31
97.5% Chebyshev(Mean, Sd) UCL	72.46	99% Chebyshev(Mean, Sd) UCL	80.61

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.61	Mean	1.22
Maximum	3.28	Median	0.915
SD	0.826	Std. Error of Mean	0.275
Coefficient of Variation	0.677	Skewness	2.338
Mean of logged Data	0.0582	SD of logged Data	0.517

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.731	95% Adjusted-CLT UCL (Chen-1995)	1.901
		95% Modified-t UCL (Johnson-1978)	1.767

Nonparametric Distribution Free UCLs

95% CLT UCL	1.672	95% Jackknife UCL	1.731
95% Standard Bootstrap UCL	1.636	95% Bootstrap-t UCL	2.468
95% Hall's Bootstrap UCL	3.366	95% Percentile Bootstrap UCL	1.678
95% BCA Bootstrap UCL	1.929		
90% Chebyshev(Mean, Sd) UCL	2.045	95% Chebyshev(Mean, Sd) UCL	2.419
97.5% Chebyshev(Mean, Sd) UCL	2.938	99% Chebyshev(Mean, Sd) UCL	3.958

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.408	Mean	0.495
Maximum	0.556	Median	0.505
SD	0.0452	Std. Error of Mean	0.0151
Coefficient of Variation	0.0912	Skewness	-0.845
Mean of logged Data	-0.707	SD of logged Data	0.0947

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.523	95% Adjusted-CLT UCL (Chen-1995)	0.515
		95% Modified-t UCL (Johnson-1978)	0.523

Nonparametric Distribution Free UCLs

95% CLT UCL	0.52	95% Jackknife UCL	0.523
95% Standard Bootstrap UCL	0.519	95% Bootstrap-t UCL	0.519
95% Hall's Bootstrap UCL	0.517	95% Percentile Bootstrap UCL	0.518
95% BCA Bootstrap UCL	0.517		
90% Chebyshev(Mean, Sd) UCL	0.54	95% Chebyshev(Mean, Sd) UCL	0.561
97.5% Chebyshev(Mean, Sd) UCL	0.589	99% Chebyshev(Mean, Sd) UCL	0.645

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	2.057
Maximum	2.13	Median	2.06
SD	0.0629	Std. Error of Mean	0.021
Coefficient of Variation	0.0306	Skewness	-0.233
Mean of logged Data	0.721	SD of logged Data	0.0307

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.096	95% Adjusted-CLT UCL (Chen-1995)	2.089
		95% Modified-t UCL (Johnson-1978)	2.095

Nonparametric Distribution Free UCLs

95% CLT UCL	2.091	95% Jackknife UCL	2.096
95% Standard Bootstrap UCL	2.09	95% Bootstrap-t UCL	2.094
95% Hall's Bootstrap UCL	2.087	95% Percentile Bootstrap UCL	2.088
95% BCA Bootstrap UCL	2.088		
90% Chebyshev(Mean, Sd) UCL	2.12	95% Chebyshev(Mean, Sd) UCL	2.148
97.5% Chebyshev(Mean, Sd) UCL	2.188	99% Chebyshev(Mean, Sd) UCL	2.265

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	3.291
Maximum	6.76	Median	2.13
SD	1.732	Std. Error of Mean	0.577
Coefficient of Variation	0.526	Skewness	1.244
Mean of logged Data	1.084	SD of logged Data	0.473

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.365	95% Adjusted-CLT UCL (Chen-1995)	4.497
		95% Modified-t UCL (Johnson-1978)	4.405

Nonparametric Distribution Free UCLs

95% CLT UCL	4.241	95% Jackknife UCL	4.365
95% Standard Bootstrap UCL	4.188	95% Bootstrap-t UCL	5.383
95% Hall's Bootstrap UCL	4.828	95% Percentile Bootstrap UCL	4.197
95% BCA Bootstrap UCL	4.366		
90% Chebyshev(Mean, Sd) UCL	5.023	95% Chebyshev(Mean, Sd) UCL	5.808
97.5% Chebyshev(Mean, Sd) UCL	6.897	99% Chebyshev(Mean, Sd) UCL	9.036

Suggested UCL to Use

95% Student's-t UCL	4.365	or 95% Modified-t UCL	4.405

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.72	Mean	3.736
Maximum	9.3	Median	2.06
SD	2.788	Std. Error of Mean	0.929
Coefficient of Variation	0.746	Skewness	1.277
Mean of logged Data	1.107	SD of logged Data	0.654

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.464	95% Adjusted-CLT UCL (Chen-1995)	5.687
		95% Modified-t UCL (Johnson-1978)	5.53

Nonparametric Distribution Free UCLs

95% CLT UCL	5.264	95% Jackknife UCL	5.464
95% Standard Bootstrap UCL	5.181	95% Bootstrap-t UCL	6.592
95% Hall's Bootstrap UCL	5.007	95% Percentile Bootstrap UCL	5.261
95% BCA Bootstrap UCL	5.386		
90% Chebyshev(Mean, Sd) UCL	6.524	95% Chebyshev(Mean, Sd) UCL	7.787
97.5% Chebyshev(Mean, Sd) UCL	9.54	99% Chebyshev(Mean, Sd) UCL	12.98

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.787

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	5.625
Maximum	10.7	Median	3.28
SD	3.207	Std. Error of Mean	1.069
Coefficient of Variation	0.57	Skewness	0.82
Mean of logged Data	1.59	SD of logged Data	0.546

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.613	95% Adjusted-CLT UCL (Chen-1995)	7.695
		95% Modified-t UCL (Johnson-1978)	7.661

Nonparametric Distribution Free UCLs

95% CLT UCL	7.383	95% Jackknife UCL	7.613
95% Standard Bootstrap UCL	7.253	95% Bootstrap-t UCL	8.573
95% Hall's Bootstrap UCL	7.498	95% Percentile Bootstrap UCL	7.303
95% BCA Bootstrap UCL	7.666		
90% Chebyshev(Mean, Sd) UCL	8.832	95% Chebyshev(Mean, Sd) UCL	10.28
97.5% Chebyshev(Mean, Sd) UCL	12.3	99% Chebyshev(Mean, Sd) UCL	16.26

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	3.955
Maximum	7.07	Median	3.28
SD	1.426	Std. Error of Mean	0.475
Coefficient of Variation	0.361	Skewness	1.79
Mean of logged Data	1.329	SD of logged Data	0.304

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.839	95% Adjusted-CLT UCL (Chen-1995)	5.04
		95% Modified-t UCL (Johnson-1978)	4.886

Nonparametric Distribution Free UCLs

95% CLT UCL	4.737	95% Jackknife UCL	4.839
95% Standard Bootstrap UCL	4.687	95% Bootstrap-t UCL	8.677
95% Hall's Bootstrap UCL	9.132	95% Percentile Bootstrap UCL	4.762
95% BCA Bootstrap UCL	5.051		
90% Chebyshev(Mean, Sd) UCL	5.381	95% Chebyshev(Mean, Sd) UCL	6.027
97.5% Chebyshev(Mean, Sd) UCL	6.923	99% Chebyshev(Mean, Sd) UCL	8.684

Suggested UCL to Use

95% Student's-t UCL	4.839	or 95% Modified-t UCL	4.886

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	3.293
Maximum	7.58	Median	2.13
SD	1.892	Std. Error of Mean	0.631
Coefficient of Variation	0.575	Skewness	1.732
Mean of logged Data	1.076	SD of logged Data	0.482

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.466	95% Adjusted-CLT UCL (Chen-1995)	4.72
		95% Modified-t UCL (Johnson-1978)	4.527

Nonparametric Distribution Free UCLs

95% CLT UCL	4.331	95% Jackknife UCL	4.466
95% Standard Bootstrap UCL	4.294	95% Bootstrap-t UCL	5.405
95% Hall's Bootstrap UCL	8.965	95% Percentile Bootstrap UCL	4.248
95% BCA Bootstrap UCL	4.83		
90% Chebyshev(Mean, Sd) UCL	5.186	95% Chebyshev(Mean, Sd) UCL	6.043
97.5% Chebyshev(Mean, Sd) UCL	7.233	99% Chebyshev(Mean, Sd) UCL	9.57

Suggested UCL to Use

95% Student's-t UCL	4.466	or 95% Modified-t UCL	4.527

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	4.158
Maximum	8.72	Median	2.13
SD	2.672	Std. Error of Mean	0.891
Coefficient of Variation	0.643	Skewness	0.727
Mean of logged Data	1.242	SD of logged Data	0.637

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.814	95% Adjusted-CLT UCL (Chen-1995)	5.853
		95% Modified-t UCL (Johnson-1978)	5.85

Nonparametric Distribution Free UCLs

95% CLT UCL	5.623	95% Jackknife UCL	5.814
95% Standard Bootstrap UCL	5.519	95% Bootstrap-t UCL	6.45
95% Hall's Bootstrap UCL	5.5	95% Percentile Bootstrap UCL	5.627
95% BCA Bootstrap UCL	5.686		
90% Chebyshev(Mean, Sd) UCL	6.83	95% Chebyshev(Mean, Sd) UCL	8.04
97.5% Chebyshev(Mean, Sd) UCL	9.72	99% Chebyshev(Mean, Sd) UCL	13.02

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.04

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	3.41
Maximum	5.42	Median	3.17
SD	0.76	Std. Error of Mean	0.253
Coefficient of Variation	0.223	Skewness	2.907
Mean of logged Data	1.21	SD of logged Data	0.183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.881	95% Adjusted-CLT UCL (Chen-1995)	4.089
		95% Modified-t UCL (Johnson-1978)	3.922

Nonparametric Distribution Free UCLs

95% CLT UCL	3.827	95% Jackknife UCL	3.881
95% Standard Bootstrap UCL	3.793	95% Bootstrap-t UCL	5.794
95% Hall's Bootstrap UCL	5.892	95% Percentile Bootstrap UCL	3.898
95% BCA Bootstrap UCL	4.151		
90% Chebyshev(Mean, Sd) UCL	4.17	95% Chebyshev(Mean, Sd) UCL	4.514
97.5% Chebyshev(Mean, Sd) UCL	4.992	99% Chebyshev(Mean, Sd) UCL	5.93

Suggested UCL to Use

95% Student's-t UCL	3.881	or 95% Modified-t UCL	3.922

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	4.973
Maximum	9.47	Median	4.755
SD	3.019	Std. Error of Mean	1.006
Coefficient of Variation	0.607	Skewness	0.233
Mean of logged Data	1.412	SD of logged Data	0.68

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.845	95% Adjusted-CLT UCL (Chen-1995)	6.712
		95% Modified-t UCL (Johnson-1978)	6.858

Nonparametric Distribution Free UCLs

95% CLT UCL	6.629	95% Jackknife UCL	6.845
95% Standard Bootstrap UCL	6.554	95% Bootstrap-t UCL	6.879
95% Hall's Bootstrap UCL	6.32	95% Percentile Bootstrap UCL	6.536
95% BCA Bootstrap UCL	6.547		
90% Chebyshev(Mean, Sd) UCL	7.993	95% Chebyshev(Mean, Sd) UCL	9.36
97.5% Chebyshev(Mean, Sd) UCL	11.26	99% Chebyshev(Mean, Sd) UCL	14.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.205	Mean	1.267
Maximum	1.315	Median	1.27
SD	0.0402	Std. Error of Mean	0.0134
Coefficient of Variation	0.0318	Skewness	-0.246
Mean of logged Data	0.236	SD of logged Data	0.0319

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.292	95% Adjusted-CLT UCL (Chen-1995)	1.288
		95% Modified-t UCL (Johnson-1978)	1.291

Nonparametric Distribution Free UCLs

95% CLT UCL	1.289	95% Jackknife UCL	1.292
95% Standard Bootstrap UCL	1.287	95% Bootstrap-t UCL	1.292
95% Hall's Bootstrap UCL	1.285	95% Percentile Bootstrap UCL	1.287
95% BCA Bootstrap UCL	1.286		
90% Chebyshev(Mean, Sd) UCL	1.307	95% Chebyshev(Mean, Sd) UCL	1.325
97.5% Chebyshev(Mean, Sd) UCL	1.35	99% Chebyshev(Mean, Sd) UCL	1.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	4.238
Maximum	8.33	Median	3.28
SD	1.851	Std. Error of Mean	0.617
Coefficient of Variation	0.437	Skewness	1.803
Mean of logged Data	1.378	SD of logged Data	0.361

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.385	95% Adjusted-CLT UCL (Chen-1995)	5.649
		95% Modified-t UCL (Johnson-1978)	5.447

Nonparametric Distribution Free UCLs

95% CLT UCL	5.253	95% Jackknife UCL	5.385
95% Standard Bootstrap UCL	5.206	95% Bootstrap-t UCL	8.969
95% Hall's Bootstrap UCL	11.16	95% Percentile Bootstrap UCL	5.254
95% BCA Bootstrap UCL	5.497		
90% Chebyshev(Mean, Sd) UCL	6.089	95% Chebyshev(Mean, Sd) UCL	6.927
97.5% Chebyshev(Mean, Sd) UCL	8.091	99% Chebyshev(Mean, Sd) UCL	10.38

Suggested UCL to Use

95% Student's-t UCL	5.385	or 95% Modified-t UCL	5.447

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.915	Mean	1.756
Maximum	2.98	Median	1.4
SD	0.784	Std. Error of Mean	0.261
Coefficient of Variation	0.447	Skewness	0.522
Mean of logged Data	0.474	SD of logged Data	0.447

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.242	95% Adjusted-CLT UCL (Chen-1995)	2.235
		95% Modified-t UCL (Johnson-1978)	2.25

Nonparametric Distribution Free UCLs

95% CLT UCL	2.186	95% Jackknife UCL	2.242
95% Standard Bootstrap UCL	2.156	95% Bootstrap-t UCL	2.325
95% Hall's Bootstrap UCL	2.106	95% Percentile Bootstrap UCL	2.183
95% BCA Bootstrap UCL	2.181		
90% Chebyshev(Mean, Sd) UCL	2.54	95% Chebyshev(Mean, Sd) UCL	2.895
97.5% Chebyshev(Mean, Sd) UCL	3.388	99% Chebyshev(Mean, Sd) UCL	4.357

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	3.381
Maximum	4.14	Median	3.27
SD	0.383	Std. Error of Mean	0.128
Coefficient of Variation	0.113	Skewness	1.11
Mean of logged Data	1.213	SD of logged Data	0.109

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.618	95% Adjusted-CLT UCL (Chen-1995)	3.641
		95% Modified-t UCL (Johnson-1978)	3.626

Nonparametric Distribution Free UCLs

95% CLT UCL	3.59	95% Jackknife UCL	3.618
95% Standard Bootstrap UCL	3.577	95% Bootstrap-t UCL	3.708
95% Hall's Bootstrap UCL	3.611	95% Percentile Bootstrap UCL	3.582
95% BCA Bootstrap UCL	3.627		
90% Chebyshev(Mean, Sd) UCL	3.763	95% Chebyshev(Mean, Sd) UCL	3.937
97.5% Chebyshev(Mean, Sd) UCL	4.177	99% Chebyshev(Mean, Sd) UCL	4.65

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	4.967
Maximum	9.01	Median	3.28
SD	2.281	Std. Error of Mean	0.76
Coefficient of Variation	0.459	Skewness	0.71
Mean of logged Data	1.513	SD of logged Data	0.444

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.381	95% Adjusted-CLT UCL (Chen-1995)	6.41
		95% Modified-t UCL (Johnson-1978)	6.411

Nonparametric Distribution Free UCLs

95% CLT UCL	6.218	95% Jackknife UCL	6.381
95% Standard Bootstrap UCL	6.181	95% Bootstrap-t UCL	6.708
95% Hall's Bootstrap UCL	6.047	95% Percentile Bootstrap UCL	6.216
95% BCA Bootstrap UCL	6.347		
90% Chebyshev(Mean, Sd) UCL	7.248	95% Chebyshev(Mean, Sd) UCL	8.281
97.5% Chebyshev(Mean, Sd) UCL	9.714	99% Chebyshev(Mean, Sd) UCL	12.53

Suggested UCL to Use

95% Student's-t UCL	6.381	or 95% Modified-t UCL	6.411

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:35:44 PM
From File	38002K_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.2	Mean	14.9
Maximum	17.2	Median	14.8
SD	2.038	Std. Error of Mean	0.679
Coefficient of Variation	0.137	Skewness	-0.302
Mean of logged Data	2.693	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.16	95% Adjusted-CLT UCL (Chen-1995)	15.94
		95% Modified-t UCL (Johnson-1978)	16.15

Nonparametric Distribution Free UCLs

95% CLT UCL	16.02	95% Jackknife UCL	16.16
95% Standard Bootstrap UCL	15.98	95% Bootstrap-t UCL	16.18
95% Hall's Bootstrap UCL	15.75	95% Percentile Bootstrap UCL	15.94
95% BCA Bootstrap UCL	15.87		
90% Chebyshev(Mean, Sd) UCL	16.94	95% Chebyshev(Mean, Sd) UCL	17.86
97.5% Chebyshev(Mean, Sd) UCL	19.14	99% Chebyshev(Mean, Sd) UCL	21.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12	Mean	12.94
Maximum	14.8	Median	12.7
SD	0.857	Std. Error of Mean	0.286
Coefficient of Variation	0.0662	Skewness	1.229

Mean of logged Data	2.559	SD of logged Data	0.0645

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.48	95% Adjusted-CLT UCL (Chen-1995)	13.54
		95% Modified-t UCL (Johnson-1978)	13.5

Nonparametric Distribution Free UCLs

95% CLT UCL	13.41	95% Jackknife UCL	13.48
95% Standard Bootstrap UCL	13.39	95% Bootstrap-t UCL	13.7
95% Hall's Bootstrap UCL	14.27	95% Percentile Bootstrap UCL	13.42
95% BCA Bootstrap UCL	13.5		
90% Chebyshev(Mean, Sd) UCL	13.8	95% Chebyshev(Mean, Sd) UCL	14.19
97.5% Chebyshev(Mean, Sd) UCL	14.73	99% Chebyshev(Mean, Sd) UCL	15.79

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.3	Mean	51.66
Maximum	57.5	Median	52.3
SD	4.761	Std. Error of Mean	1.587
Coefficient of Variation	0.0922	Skewness	-0.3
Mean of logged Data	3.941	SD of logged Data	0.0936

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.61	95% Adjusted-CLT UCL (Chen-1995)	54.1
		95% Modified-t UCL (Johnson-1978)	54.58

Nonparametric Distribution Free UCLs

95% CLT UCL	54.27	95% Jackknife UCL	54.61
95% Standard Bootstrap UCL	54.17	95% Bootstrap-t UCL	54.45
95% Hall's Bootstrap UCL	53.8	95% Percentile Bootstrap UCL	54.12
95% BCA Bootstrap UCL	53.98		
90% Chebyshev(Mean, Sd) UCL	56.42	95% Chebyshev(Mean, Sd) UCL	58.57
97.5% Chebyshev(Mean, Sd) UCL	61.57	99% Chebyshev(Mean, Sd) UCL	67.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.955	Mean	0.978
Maximum	0.995	Median	0.975
SD	0.0146	Std. Error of Mean	0.00487
Coefficient of Variation	0.0149	Skewness	-0.286
Mean of logged Data	-0.0226	SD of logged Data	0.015

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.987	95% Adjusted-CLT UCL (Chen-1995)	0.985
		95% Modified-t UCL (Johnson-1978)	0.987

Nonparametric Distribution Free UCLs

95% CLT UCL	0.986	95% Jackknife UCL	0.987
95% Standard Bootstrap UCL	0.985	95% Bootstrap-t UCL	0.987
95% Hall's Bootstrap UCL	0.985	95% Percentile Bootstrap UCL	0.986
95% BCA Bootstrap UCL	0.986		
90% Chebyshev(Mean, Sd) UCL	0.992	95% Chebyshev(Mean, Sd) UCL	0.999
97.5% Chebyshev(Mean, Sd) UCL	1.008	99% Chebyshev(Mean, Sd) UCL	1.026

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.51	Mean	0.522
Maximum	0.53	Median	0.52

SD	0.00791	Std. Error of Mean	0.00264
Coefficient of Variation	0.0152	Skewness	-0.461
Mean of logged Data	-0.651	SD of logged Data	0.0152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.527	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.526

Nonparametric Distribution Free UCLs

95% CLT UCL	0.526	95% Jackknife UCL	0.527
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.53	95% Chebyshev(Mean, Sd) UCL	0.533
97.5% Chebyshev(Mean, Sd) UCL	0.538	99% Chebyshev(Mean, Sd) UCL	0.548

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.065	Mean	2.118
Maximum	2.155	Median	2.115
SD	0.031	Std. Error of Mean	0.0103
Coefficient of Variation	0.0147	Skewness	-0.516
Mean of logged Data	0.75	SD of logged Data	0.0147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.137	95% Adjusted-CLT UCL (Chen-1995)	2.133
		95% Modified-t UCL (Johnson-1978)	2.137

Nonparametric Distribution Free UCLs

95% CLT UCL	2.135	95% Jackknife UCL	2.137
95% Standard Bootstrap UCL	2.134	95% Bootstrap-t UCL	2.135

95% Hall's Bootstrap UCL	2.133	95% Percentile Bootstrap UCL	2.133
95% BCA Bootstrap UCL	2.133		
90% Chebyshev(Mean, Sd) UCL	2.149	95% Chebyshev(Mean, Sd) UCL	2.163
97.5% Chebyshev(Mean, Sd) UCL	2.182	99% Chebyshev(Mean, Sd) UCL	2.221

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.08	Mean	3.003
Maximum	5.73	Median	2.145
SD	1.444	Std. Error of Mean	0.481
Coefficient of Variation	0.481	Skewness	1.359
Mean of logged Data	1.015	SD of logged Data	0.415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.899	95% Adjusted-CLT UCL (Chen-1995)	4.028
		95% Modified-t UCL (Johnson-1978)	3.935

Nonparametric Distribution Free UCLs

95% CLT UCL	3.795	95% Jackknife UCL	3.899
95% Standard Bootstrap UCL	3.745	95% Bootstrap-t UCL	5.368
95% Hall's Bootstrap UCL	4.172	95% Percentile Bootstrap UCL	3.794
95% BCA Bootstrap UCL	4.045		
90% Chebyshev(Mean, Sd) UCL	4.448	95% Chebyshev(Mean, Sd) UCL	5.102
97.5% Chebyshev(Mean, Sd) UCL	6.01	99% Chebyshev(Mean, Sd) UCL	7.794

Suggested UCL to Use

95% Student's-t UCL	3.899	or 95% Modified-t UCL	3.935

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0

Minimum	2.08	Mean	3.359
Maximum	8.37	Median	2.13
SD	2.481	Std. Error of Mean	0.827
Coefficient of Variation	0.739	Skewness	1.699
Mean of logged Data	1.037	SD of logged Data	0.568

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.897	95% Adjusted-CLT UCL (Chen-1995)	5.22
		95% Modified-t UCL (Johnson-1978)	4.975

Nonparametric Distribution Free UCLs

95% CLT UCL	4.72	95% Jackknife UCL	4.897
95% Standard Bootstrap UCL	4.644	95% Bootstrap-t UCL	132.4
95% Hall's Bootstrap UCL	64.97	95% Percentile Bootstrap UCL	4.752
95% BCA Bootstrap UCL	4.992		
90% Chebyshev(Mean, Sd) UCL	5.841	95% Chebyshev(Mean, Sd) UCL	6.965
97.5% Chebyshev(Mean, Sd) UCL	8.524	99% Chebyshev(Mean, Sd) UCL	11.59

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.965

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.2	Mean	5.014
Maximum	10.5	Median	3.305
SD	2.819	Std. Error of Mean	0.94
Coefficient of Variation	0.562	Skewness	1.324
Mean of logged Data	1.496	SD of logged Data	0.485

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.762	95% Adjusted-CLT UCL (Chen-1995)	7.004
		95% Modified-t UCL (Johnson-1978)	6.831

Nonparametric Distribution Free UCLs

95% CLT UCL	6.56	95% Jackknife UCL	6.762
95% Standard Bootstrap UCL	6.494	95% Bootstrap-t UCL	8.877
95% Hall's Bootstrap UCL	6.905	95% Percentile Bootstrap UCL	6.615

95% BCA Bootstrap UCL	6.881		
90% Chebyshev(Mean, Sd) UCL	7.834	95% Chebyshev(Mean, Sd) UCL	9.111
97.5% Chebyshev(Mean, Sd) UCL	10.88	99% Chebyshev(Mean, Sd) UCL	14.36

Suggested UCL to Use

95% Student's-t UCL	6.762	or 95% Modified-t UCL	6.831

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.1	Mean	3.616
Maximum	5.28	Median	3.28
SD	0.762	Std. Error of Mean	0.254
Coefficient of Variation	0.211	Skewness	1.829
Mean of logged Data	1.268	SD of logged Data	0.187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.088	95% Adjusted-CLT UCL (Chen-1995)	4.199
		95% Modified-t UCL (Johnson-1978)	4.113

Nonparametric Distribution Free UCLs

95% CLT UCL	4.033	95% Jackknife UCL	4.088
95% Standard Bootstrap UCL	4.006	95% Bootstrap-t UCL	7.766
95% Hall's Bootstrap UCL	9.244	95% Percentile Bootstrap UCL	4.064
95% BCA Bootstrap UCL	4.169		
90% Chebyshev(Mean, Sd) UCL	4.377	95% Chebyshev(Mean, Sd) UCL	4.722
97.5% Chebyshev(Mean, Sd) UCL	5.201	99% Chebyshev(Mean, Sd) UCL	6.142

Suggested UCL to Use

95% Student's-t UCL	4.088	or 95% Modified-t UCL	4.113

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.08	Mean	2.617
Maximum	4.21	Median	2.145
SD	0.905	Std. Error of Mean	0.302
Coefficient of Variation	0.346	Skewness	1.577

Mean of logged Data	0.918	SD of logged Data	0.297

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.178	95% Adjusted-CLT UCL (Chen-1995)	3.282
		95% Modified-t UCL (Johnson-1978)	3.204

Nonparametric Distribution Free UCLs

95% CLT UCL	3.113	95% Jackknife UCL	3.178
95% Standard Bootstrap UCL	3.093	95% Bootstrap-t UCL	7.027
95% Hall's Bootstrap UCL	9.046	95% Percentile Bootstrap UCL	3.086
95% BCA Bootstrap UCL	3.279		
90% Chebyshev(Mean, Sd) UCL	3.522	95% Chebyshev(Mean, Sd) UCL	3.932
97.5% Chebyshev(Mean, Sd) UCL	4.501	99% Chebyshev(Mean, Sd) UCL	5.619

Suggested UCL to Use

95% Student's-t UCL	3.178	or 95% Modified-t UCL	3.204

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.08	Mean	3.439
Maximum	7.06	Median	2.145
SD	2.072	Std. Error of Mean	0.691
Coefficient of Variation	0.602	Skewness	1.162
Mean of logged Data	1.098	SD of logged Data	0.529

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.723	95% Adjusted-CLT UCL (Chen-1995)	4.86
		95% Modified-t UCL (Johnson-1978)	4.768

Nonparametric Distribution Free UCLs

95% CLT UCL	4.575	95% Jackknife UCL	4.723
95% Standard Bootstrap UCL	4.518	95% Bootstrap-t UCL	5.985
95% Hall's Bootstrap UCL	4.283	95% Percentile Bootstrap UCL	4.606
95% BCA Bootstrap UCL	4.746		
90% Chebyshev(Mean, Sd) UCL	5.511	95% Chebyshev(Mean, Sd) UCL	6.449
97.5% Chebyshev(Mean, Sd) UCL	7.752	99% Chebyshev(Mean, Sd) UCL	10.31

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.449

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.175	Mean	3.259
Maximum	3.315	Median	3.255
SD	0.049	Std. Error of Mean	0.0163
Coefficient of Variation	0.015	Skewness	-0.567
Mean of logged Data	1.181	SD of logged Data	0.0151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.29	95% Adjusted-CLT UCL (Chen-1995)	3.283
		95% Modified-t UCL (Johnson-1978)	3.289

Nonparametric Distribution Free UCLs

95% CLT UCL	3.286	95% Jackknife UCL	3.29
95% Standard Bootstrap UCL	3.285	95% Bootstrap-t UCL	3.286
95% Hall's Bootstrap UCL	3.284	95% Percentile Bootstrap UCL	3.284
95% BCA Bootstrap UCL	3.283		
90% Chebyshev(Mean, Sd) UCL	3.308	95% Chebyshev(Mean, Sd) UCL	3.331
97.5% Chebyshev(Mean, Sd) UCL	3.361	99% Chebyshev(Mean, Sd) UCL	3.422

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.08	Mean	4.444
Maximum	10.5	Median	2.145
SD	3.55	Std. Error of Mean	1.183
Coefficient of Variation	0.799	Skewness	1.002
Mean of logged Data	1.235	SD of logged Data	0.727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.645	95% Adjusted-CLT UCL (Chen-1995)	6.813
		95% Modified-t UCL (Johnson-1978)	6.711

Nonparametric Distribution Free UCLs

95% CLT UCL	6.391	95% Jackknife UCL	6.645
95% Standard Bootstrap UCL	6.294	95% Bootstrap-t UCL	7.668
95% Hall's Bootstrap UCL	5.77	95% Percentile Bootstrap UCL	6.307
95% BCA Bootstrap UCL	6.606		
90% Chebyshev(Mean, Sd) UCL	7.994	95% Chebyshev(Mean, Sd) UCL	9.602
97.5% Chebyshev(Mean, Sd) UCL	11.83	99% Chebyshev(Mean, Sd) UCL	16.22

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.602

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.27	Mean	1.304
Maximum	1.325	Median	1.305
SD	0.0196	Std. Error of Mean	0.00655
Coefficient of Variation	0.0151	Skewness	-0.613
Mean of logged Data	0.265	SD of logged Data	0.0151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.316	95% Adjusted-CLT UCL (Chen-1995)	1.313
		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.315	95% Jackknife UCL	1.316
95% Standard Bootstrap UCL	1.314	95% Bootstrap-t UCL	1.315
95% Hall's Bootstrap UCL	1.313	95% Percentile Bootstrap UCL	1.314
95% BCA Bootstrap UCL	1.313		
90% Chebyshev(Mean, Sd) UCL	1.324	95% Chebyshev(Mean, Sd) UCL	1.332
97.5% Chebyshev(Mean, Sd) UCL	1.345	99% Chebyshev(Mean, Sd) UCL	1.369

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.2	Mean	3.893
Maximum	6.25	Median	3.305
SD	1.136	Std. Error of Mean	0.379
Coefficient of Variation	0.292	Skewness	1.678
Mean of logged Data	1.328	SD of logged Data	0.253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.597	95% Adjusted-CLT UCL (Chen-1995)	4.742
		95% Modified-t UCL (Johnson-1978)	4.633

Nonparametric Distribution Free UCLs

95% CLT UCL	4.516	95% Jackknife UCL	4.597
95% Standard Bootstrap UCL	4.467	95% Bootstrap-t UCL	7.883
95% Hall's Bootstrap UCL	9.42	95% Percentile Bootstrap UCL	4.519
95% BCA Bootstrap UCL	4.711		
90% Chebyshev(Mean, Sd) UCL	5.029	95% Chebyshev(Mean, Sd) UCL	5.544
97.5% Chebyshev(Mean, Sd) UCL	6.258	99% Chebyshev(Mean, Sd) UCL	7.661

Suggested UCL to Use

95% Student's-t UCL	4.597	or 95% Modified-t UCL	4.633

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.96	Mean	1.431
Maximum	2.44	Median	0.99
SD	0.679	Std. Error of Mean	0.226
Coefficient of Variation	0.474	Skewness	0.881
Mean of logged Data	0.269	SD of logged Data	0.434

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.852	95% Adjusted-CLT UCL (Chen-1995)	1.874
		95% Modified-t UCL (Johnson-1978)	1.863

Nonparametric Distribution Free UCLs

95% CLT UCL	1.803	95% Jackknife UCL	1.852
95% Standard Bootstrap UCL	1.791	95% Bootstrap-t UCL	1.944
95% Hall's Bootstrap UCL	1.648	95% Percentile Bootstrap UCL	1.761
95% BCA Bootstrap UCL	1.859		
90% Chebyshev(Mean, Sd) UCL	2.11	95% Chebyshev(Mean, Sd) UCL	2.418
97.5% Chebyshev(Mean, Sd) UCL	2.845	99% Chebyshev(Mean, Sd) UCL	3.683

Suggested UCL to Use

95% Student's-t UCL	1.852	or 95% Modified-t UCL	1.863

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.2	Mean	3.567
Maximum	5	Median	3.305
SD	0.577	Std. Error of Mean	0.192
Coefficient of Variation	0.162	Skewness	2.336
Mean of logged Data	1.262	SD of logged Data	0.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.924	95% Adjusted-CLT UCL (Chen-1995)	4.043
		95% Modified-t UCL (Johnson-1978)	3.949

Nonparametric Distribution Free UCLs

95% CLT UCL	3.883	95% Jackknife UCL	3.924
95% Standard Bootstrap UCL	3.867	95% Bootstrap-t UCL	4.496
95% Hall's Bootstrap UCL	4.833	95% Percentile Bootstrap UCL	3.901
95% BCA Bootstrap UCL	4.079		
90% Chebyshev(Mean, Sd) UCL	4.144	95% Chebyshev(Mean, Sd) UCL	4.405
97.5% Chebyshev(Mean, Sd) UCL	4.767	99% Chebyshev(Mean, Sd) UCL	5.48

Suggested UCL to Use

95% Student's-t UCL	3.924	or 95% Modified-t UCL	3.949

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.2	Mean	5.009
Maximum	9.59	Median	3.305
SD	2.669	Std. Error of Mean	0.89
Coefficient of Variation	0.533	Skewness	1.018
Mean of logged Data	1.501	SD of logged Data	0.479

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.664	95% Adjusted-CLT UCL (Chen-1995)	6.795
		95% Modified-t UCL (Johnson-1978)	6.714

Nonparametric Distribution Free UCLs

95% CLT UCL	6.472	95% Jackknife UCL	6.664
95% Standard Bootstrap UCL	6.384	95% Bootstrap-t UCL	7.511
95% Hall's Bootstrap UCL	6.047	95% Percentile Bootstrap UCL	6.423
95% BCA Bootstrap UCL	6.637		
90% Chebyshev(Mean, Sd) UCL	7.678	95% Chebyshev(Mean, Sd) UCL	8.887
97.5% Chebyshev(Mean, Sd) UCL	10.57	99% Chebyshev(Mean, Sd) UCL	13.86

Suggested UCL to Use

95% Student's-t UCL	6.664	or 95% Modified-t UCL	6.714

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:36:55 PM
From File	38002L_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.3	Mean	14.71
Maximum	16.7	Median	14.5
SD	1.357	Std. Error of Mean	0.452
Coefficient of Variation	0.0922	Skewness	-0.131
Mean of logged Data	2.685	SD of logged Data	0.0934

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.55	95% Adjusted-CLT UCL (Chen-1995)	15.43
		95% Modified-t UCL (Johnson-1978)	15.55

Nonparametric Distribution Free UCLs

95% CLT UCL	15.46	95% Jackknife UCL	15.55
95% Standard Bootstrap UCL	15.41	95% Bootstrap-t UCL	15.53
95% Hall's Bootstrap UCL	15.48	95% Percentile Bootstrap UCL	15.38
95% BCA Bootstrap UCL	15.33		
90% Chebyshev(Mean, Sd) UCL	16.07	95% Chebyshev(Mean, Sd) UCL	16.68
97.5% Chebyshev(Mean, Sd) UCL	17.54	99% Chebyshev(Mean, Sd) UCL	19.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11	Mean	12.28
Maximum	13.8	Median	11.9
SD	0.883	Std. Error of Mean	0.294
Coefficient of Variation	0.0719	Skewness	0.429

Mean of logged Data	2.506	SD of logged Data	0.0713

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.83	95% Adjusted-CLT UCL (Chen-1995)	12.81
		95% Modified-t UCL (Johnson-1978)	12.83

Nonparametric Distribution Free UCLs

95% CLT UCL	12.76	95% Jackknife UCL	12.83
95% Standard Bootstrap UCL	12.74	95% Bootstrap-t UCL	12.99
95% Hall's Bootstrap UCL	12.83	95% Percentile Bootstrap UCL	12.73
95% BCA Bootstrap UCL	12.79		
90% Chebyshev(Mean, Sd) UCL	13.16	95% Chebyshev(Mean, Sd) UCL	13.56
97.5% Chebyshev(Mean, Sd) UCL	14.12	99% Chebyshev(Mean, Sd) UCL	15.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.4	Mean	50.97
Maximum	57.1	Median	49.4
SD	3.708	Std. Error of Mean	1.236
Coefficient of Variation	0.0728	Skewness	0.412
Mean of logged Data	3.929	SD of logged Data	0.0722

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.27	95% Adjusted-CLT UCL (Chen-1995)	53.18
		95% Modified-t UCL (Johnson-1978)	53.29

Nonparametric Distribution Free UCLs

95% CLT UCL	53	95% Jackknife UCL	53.27
95% Standard Bootstrap UCL	52.85	95% Bootstrap-t UCL	53.68
95% Hall's Bootstrap UCL	53.36	95% Percentile Bootstrap UCL	52.83
95% BCA Bootstrap UCL	52.93		
90% Chebyshev(Mean, Sd) UCL	54.68	95% Chebyshev(Mean, Sd) UCL	56.35
97.5% Chebyshev(Mean, Sd) UCL	58.69	99% Chebyshev(Mean, Sd) UCL	63.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.91	Mean	1.084
Maximum	1.97	Median	0.985
SD	0.333	Std. Error of Mean	0.111
Coefficient of Variation	0.307	Skewness	2.964
Mean of logged Data	0.0514	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.291	95% Adjusted-CLT UCL (Chen-1995)	1.384
		95% Modified-t UCL (Johnson-1978)	1.309

Nonparametric Distribution Free UCLs

95% CLT UCL	1.267	95% Jackknife UCL	1.291
95% Standard Bootstrap UCL	1.255	95% Bootstrap-t UCL	4.685
95% Hall's Bootstrap UCL	3.158	95% Percentile Bootstrap UCL	1.294
95% BCA Bootstrap UCL	1.41		
90% Chebyshev(Mean, Sd) UCL	1.418	95% Chebyshev(Mean, Sd) UCL	1.568
97.5% Chebyshev(Mean, Sd) UCL	1.778	99% Chebyshev(Mean, Sd) UCL	2.189

Suggested UCL to Use

95% Student's-t UCL	1.291	or 95% Modified-t UCL	1.309

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.487	Mean	0.674
Maximum	1.91	Median	0.525
SD	0.464	Std. Error of Mean	0.155
Coefficient of Variation	0.688	Skewness	2.995
Mean of logged Data	-0.51	SD of logged Data	0.435

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.961	95% Adjusted-CLT UCL (Chen-1995)	1.093
		95% Modified-t UCL (Johnson-1978)	0.987

Nonparametric Distribution Free UCLs

95% CLT UCL	0.928	95% Jackknife UCL	0.961
95% Standard Bootstrap UCL	0.92	95% Bootstrap-t UCL	13.42
95% Hall's Bootstrap UCL	6.894	95% Percentile Bootstrap UCL	0.983
95% BCA Bootstrap UCL	1.136		
90% Chebyshev(Mean, Sd) UCL	1.138	95% Chebyshev(Mean, Sd) UCL	1.348
97.5% Chebyshev(Mean, Sd) UCL	1.639	99% Chebyshev(Mean, Sd) UCL	2.212

Suggested UCL to Use

95% Student's-t UCL	0.961	or 95% Modified-t UCL	0.987

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.975	Mean	2.179
Maximum	2.75	Median	2.13
SD	0.221	Std. Error of Mean	0.0736
Coefficient of Variation	0.101	Skewness	2.62
Mean of logged Data	0.775	SD of logged Data	0.0926

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.316	95% Adjusted-CLT UCL (Chen-1995)	2.369
		95% Modified-t UCL (Johnson-1978)	2.327

Nonparametric Distribution Free UCLs

95% CLT UCL	2.301	95% Jackknife UCL	2.316
95% Standard Bootstrap UCL	2.295	95% Bootstrap-t UCL	2.71
95% Hall's Bootstrap UCL	2.948	95% Percentile Bootstrap UCL	2.316
95% BCA Bootstrap UCL	2.336		
90% Chebyshev(Mean, Sd) UCL	2.4	95% Chebyshev(Mean, Sd) UCL	2.5
97.5% Chebyshev(Mean, Sd) UCL	2.639	99% Chebyshev(Mean, Sd) UCL	2.912

Suggested UCL to Use

95% Student's-t UCL	2.316	or 95% Modified-t UCL	2.327

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.89	Mean	4.368
Maximum	22.1	Median	2.13
SD	6.653	Std. Error of Mean	2.218
Coefficient of Variation	1.523	Skewness	2.994
Mean of logged Data	1.021	SD of logged Data	0.783

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.492	95% Adjusted-CLT UCL (Chen-1995)	10.38
		95% Modified-t UCL (Johnson-1978)	8.86

Nonparametric Distribution Free UCLs

95% CLT UCL	8.015	95% Jackknife UCL	8.492
95% Standard Bootstrap UCL	7.947	95% Bootstrap-t UCL	161.6
95% Hall's Bootstrap UCL	109.4	95% Percentile Bootstrap UCL	8.772
95% BCA Bootstrap UCL	10.99		
90% Chebyshev(Mean, Sd) UCL	11.02	95% Chebyshev(Mean, Sd) UCL	14.03
97.5% Chebyshev(Mean, Sd) UCL	18.22	99% Chebyshev(Mean, Sd) UCL	26.43

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.03

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.975	Mean	5.01
Maximum	27.4	Median	2.13
SD	8.401	Std. Error of Mean	2.8
Coefficient of Variation	1.677	Skewness	2.994
Mean of logged Data	1.067	SD of logged Data	0.849

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.22	95% Adjusted-CLT UCL (Chen-1995)	12.6
		95% Modified-t UCL (Johnson-1978)	10.68

Nonparametric Distribution Free UCLs

95% CLT UCL	9.616	95% Jackknife UCL	10.22
95% Standard Bootstrap UCL	9.313	95% Bootstrap-t UCL	441.3
95% Hall's Bootstrap UCL	312.5	95% Percentile Bootstrap UCL	10.54
95% BCA Bootstrap UCL	13.35		
90% Chebyshev(Mean, Sd) UCL	13.41	95% Chebyshev(Mean, Sd) UCL	17.22
97.5% Chebyshev(Mean, Sd) UCL	22.5	99% Chebyshev(Mean, Sd) UCL	32.87

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.22

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.04	Mean	6.754
Maximum	32.7	Median	3.29
SD	9.747	Std. Error of Mean	3.249
Coefficient of Variation	1.443	Skewness	2.981
Mean of logged Data	1.494	SD of logged Data	0.761

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.8	95% Adjusted-CLT UCL (Chen-1995)	15.55
		95% Modified-t UCL (Johnson-1978)	13.33

Nonparametric Distribution Free UCLs

95% CLT UCL	12.1	95% Jackknife UCL	12.8
95% Standard Bootstrap UCL	11.77	95% Bootstrap-t UCL	235.1
95% Hall's Bootstrap UCL	98.83	95% Percentile Bootstrap UCL	13.25
95% BCA Bootstrap UCL	16.71		
90% Chebyshev(Mean, Sd) UCL	16.5	95% Chebyshev(Mean, Sd) UCL	20.92
97.5% Chebyshev(Mean, Sd) UCL	27.04	99% Chebyshev(Mean, Sd) UCL	39.08

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	20.92

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.47	Mean	4.668
Maximum	16.8	Median	3.28
SD	4.558	Std. Error of Mean	1.519
Coefficient of Variation	0.976	Skewness	2.979
Mean of logged Data	1.33	SD of logged Data	0.567

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.493	95% Adjusted-CLT UCL (Chen-1995)	8.779
		95% Modified-t UCL (Johnson-1978)	7.744

Nonparametric Distribution Free UCLs

95% CLT UCL	7.167	95% Jackknife UCL	7.493
95% Standard Bootstrap UCL	7.038	95% Bootstrap-t UCL	79.38
95% Hall's Bootstrap UCL	73.26	95% Percentile Bootstrap UCL	7.67
95% BCA Bootstrap UCL	7.789		
90% Chebyshev(Mean, Sd) UCL	9.225	95% Chebyshev(Mean, Sd) UCL	11.29
97.5% Chebyshev(Mean, Sd) UCL	14.16	99% Chebyshev(Mean, Sd) UCL	19.78

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.29

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.975	Mean	3.407
Maximum	13.8	Median	2.13
SD	3.898	Std. Error of Mean	1.299
Coefficient of Variation	1.144	Skewness	2.999
Mean of logged Data	0.954	SD of logged Data	0.627

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.823	95% Adjusted-CLT UCL (Chen-1995)	6.932

		95% Modified-t UCL (Johnson-1978)	6.04

Nonparametric Distribution Free UCLs

95% CLT UCL	5.544	95% Jackknife UCL	5.823
95% Standard Bootstrap UCL	5.437	95% Bootstrap-t UCL	222.5
95% Hall's Bootstrap UCL	98.21	95% Percentile Bootstrap UCL	5.996
95% BCA Bootstrap UCL	7.297		
90% Chebyshev(Mean, Sd) UCL	7.305	95% Chebyshev(Mean, Sd) UCL	9.07
97.5% Chebyshev(Mean, Sd) UCL	11.52	99% Chebyshev(Mean, Sd) UCL	16.33

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.975	Mean	5.608
Maximum	30.9	Median	2.14
SD	9.506	Std. Error of Mean	3.169
Coefficient of Variation	1.695	Skewness	2.975
Mean of logged Data	1.152	SD of logged Data	0.883

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.5	95% Adjusted-CLT UCL (Chen-1995)	14.18
		95% Modified-t UCL (Johnson-1978)	12.02

Nonparametric Distribution Free UCLs

95% CLT UCL	10.82	95% Jackknife UCL	11.5
95% Standard Bootstrap UCL	10.66	95% Bootstrap-t UCL	116.4
95% Hall's Bootstrap UCL	108.4	95% Percentile Bootstrap UCL	11.91
95% BCA Bootstrap UCL	14.99		
90% Chebyshev(Mean, Sd) UCL	15.11	95% Chebyshev(Mean, Sd) UCL	19.42
97.5% Chebyshev(Mean, Sd) UCL	25.4	99% Chebyshev(Mean, Sd) UCL	37.13

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.42

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.04	Mean	3.353
Maximum	4.23	Median	3.28
SD	0.339	Std. Error of Mean	0.113
Coefficient of Variation	0.101	Skewness	2.624
Mean of logged Data	1.206	SD of logged Data	0.0924

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.564	95% Adjusted-CLT UCL (Chen-1995)	3.645
		95% Modified-t UCL (Johnson-1978)	3.58

Nonparametric Distribution Free UCLs

95% CLT UCL	3.539	95% Jackknife UCL	3.564
95% Standard Bootstrap UCL	3.529	95% Bootstrap-t UCL	4.147
95% Hall's Bootstrap UCL	4.552	95% Percentile Bootstrap UCL	3.533
95% BCA Bootstrap UCL	3.604		
90% Chebyshev(Mean, Sd) UCL	3.693	95% Chebyshev(Mean, Sd) UCL	3.846
97.5% Chebyshev(Mean, Sd) UCL	4.059	99% Chebyshev(Mean, Sd) UCL	4.478

Suggested UCL to Use

95% Student's-t UCL	3.564	or 95% Modified-t UCL	3.58

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.975	Mean	6.609
Maximum	37	Median	2.14
SD	11.46	Std. Error of Mean	3.822
Coefficient of Variation	1.735	Skewness	2.934
Mean of logged Data	1.251	SD of logged Data	0.958

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.72	95% Adjusted-CLT UCL (Chen-1995)	16.89
		95% Modified-t UCL (Johnson-1978)	14.34

Nonparametric Distribution Free UCLs

95% CLT UCL	12.89	95% Jackknife UCL	13.72

95% Standard Bootstrap UCL	12.32	95% Bootstrap-t UCL	73.07
95% Hall's Bootstrap UCL	72.82	95% Percentile Bootstrap UCL	14
95% BCA Bootstrap UCL	18		
90% Chebyshev(Mean, Sd) UCL	18.07	95% Chebyshev(Mean, Sd) UCL	23.27
97.5% Chebyshev(Mean, Sd) UCL	30.47	99% Chebyshev(Mean, Sd) UCL	44.63

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	23.27

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.215	Mean	1.296
Maximum	1.33	Median	1.31
SD	0.0334	Std. Error of Mean	0.0111
Coefficient of Variation	0.0258	Skewness	-2.018
Mean of logged Data	0.259	SD of logged Data	0.0263

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.316	95% Adjusted-CLT UCL (Chen-1995)	1.306
		95% Modified-t UCL (Johnson-1978)	1.315

Nonparametric Distribution Free UCLs

95% CLT UCL	1.314	95% Jackknife UCL	1.316
95% Standard Bootstrap UCL	1.313	95% Bootstrap-t UCL	1.31
95% Hall's Bootstrap UCL	1.308	95% Percentile Bootstrap UCL	1.311
95% BCA Bootstrap UCL	1.308		
90% Chebyshev(Mean, Sd) UCL	1.329	95% Chebyshev(Mean, Sd) UCL	1.344
97.5% Chebyshev(Mean, Sd) UCL	1.365	99% Chebyshev(Mean, Sd) UCL	1.406

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8

		Number of Missing Observations	0
Minimum	2.49	Mean	4.926
Maximum	19.1	Median	3.28
SD	5.322	Std. Error of Mean	1.774
Coefficient of Variation	1.08	Skewness	2.985
Mean of logged Data	1.345	SD of logged Data	0.609

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.224	95% Adjusted-CLT UCL (Chen-1995)	9.73
		95% Modified-t UCL (Johnson-1978)	8.519

Nonparametric Distribution Free UCLs

95% CLT UCL	7.844	95% Jackknife UCL	8.224
95% Standard Bootstrap UCL	7.703	95% Bootstrap-t UCL	110.4
95% Hall's Bootstrap UCL	101	95% Percentile Bootstrap UCL	8.446
95% BCA Bootstrap UCL	10.11		
90% Chebyshev(Mean, Sd) UCL	10.25	95% Chebyshev(Mean, Sd) UCL	12.66
97.5% Chebyshev(Mean, Sd) UCL	16	99% Chebyshev(Mean, Sd) UCL	22.58

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.66

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.91	Mean	1.961
Maximum	8.1	Median	0.985
SD	2.333	Std. Error of Mean	0.778
Coefficient of Variation	1.19	Skewness	2.854
Mean of logged Data	0.352	SD of logged Data	0.71

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.407	95% Adjusted-CLT UCL (Chen-1995)	4.031
		95% Modified-t UCL (Johnson-1978)	3.531

Nonparametric Distribution Free UCLs

95% CLT UCL	3.24	95% Jackknife UCL	3.407
95% Standard Bootstrap UCL	3.127	95% Bootstrap-t UCL	9.291

95% Hall's Bootstrap UCL	9.396	95% Percentile Bootstrap UCL	3.449
95% BCA Bootstrap UCL	4.24		
90% Chebyshev(Mean, Sd) UCL	4.294	95% Chebyshev(Mean, Sd) UCL	5.351
97.5% Chebyshev(Mean, Sd) UCL	6.818	99% Chebyshev(Mean, Sd) UCL	9.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	5.351

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.37	Mean	4.809
Maximum	18.5	Median	3.28
SD	5.143	Std. Error of Mean	1.714
Coefficient of Variation	1.069	Skewness	2.979
Mean of logged Data	1.324	SD of logged Data	0.607

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.997	95% Adjusted-CLT UCL (Chen-1995)	9.448
		95% Modified-t UCL (Johnson-1978)	8.281

Nonparametric Distribution Free UCLs

95% CLT UCL	7.629	95% Jackknife UCL	7.997
95% Standard Bootstrap UCL	7.38	95% Bootstrap-t UCL	61.29
95% Hall's Bootstrap UCL	46.49	95% Percentile Bootstrap UCL	8.198
95% BCA Bootstrap UCL	9.863		
90% Chebyshev(Mean, Sd) UCL	9.953	95% Chebyshev(Mean, Sd) UCL	12.28
97.5% Chebyshev(Mean, Sd) UCL	15.52	99% Chebyshev(Mean, Sd) UCL	21.87

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.04	Mean	7.795
Maximum	41.7	Median	3.29
SD	12.73	Std. Error of Mean	4.243

Coefficient of Variation	1.633	Skewness	2.986
Mean of logged Data	1.53	SD of logged Data	0.84

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.69	95% Adjusted-CLT UCL (Chen-1995)	19.29
		95% Modified-t UCL (Johnson-1978)	16.39

Nonparametric Distribution Free UCLs

95% CLT UCL	14.77	95% Jackknife UCL	15.69
95% Standard Bootstrap UCL	14.4	95% Bootstrap-t UCL	269.2
95% Hall's Bootstrap UCL	177.4	95% Percentile Bootstrap UCL	16.13
95% BCA Bootstrap UCL	20.59		
90% Chebyshev(Mean, Sd) UCL	20.53	95% Chebyshev(Mean, Sd) UCL	26.29
97.5% Chebyshev(Mean, Sd) UCL	34.3	99% Chebyshev(Mean, Sd) UCL	50.02

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	26.29

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:42:07 PM
From File	38002M_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.3	Mean	11.76
Maximum	12.35	Median	11.6
SD	0.38	Std. Error of Mean	0.127
Coefficient of Variation	0.0323	Skewness	0.517
Mean of logged Data	2.464	SD of logged Data	0.0321

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12	95% Adjusted-CLT UCL (Chen-1995)	11.99
		95% Modified-t UCL (Johnson-1978)	12

Nonparametric Distribution Free UCLs

95% CLT UCL	11.97	95% Jackknife UCL	12
95% Standard Bootstrap UCL	11.96	95% Bootstrap-t UCL	12.04
95% Hall's Bootstrap UCL	11.95	95% Percentile Bootstrap UCL	11.96
95% BCA Bootstrap UCL	11.98		
90% Chebyshev(Mean, Sd) UCL	12.14	95% Chebyshev(Mean, Sd) UCL	12.31
97.5% Chebyshev(Mean, Sd) UCL	12.55	99% Chebyshev(Mean, Sd) UCL	13.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	9.68	Mean	10.37
Maximum	11.3	Median	10.3
SD	0.647	Std. Error of Mean	0.216
Coefficient of Variation	0.0624	Skewness	0.435
Mean of logged Data	2.337	SD of logged Data	0.0618

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.77	95% Adjusted-CLT UCL (Chen-1995)	10.76
		95% Modified-t UCL (Johnson-1978)	10.78

Nonparametric Distribution Free UCLs

95% CLT UCL	10.72	95% Jackknife UCL	10.77
95% Standard Bootstrap UCL	10.71	95% Bootstrap-t UCL	10.81
95% Hall's Bootstrap UCL	10.71	95% Percentile Bootstrap UCL	10.72
95% BCA Bootstrap UCL	10.72		
90% Chebyshev(Mean, Sd) UCL	11.02	95% Chebyshev(Mean, Sd) UCL	11.31
97.5% Chebyshev(Mean, Sd) UCL	11.72	99% Chebyshev(Mean, Sd) UCL	12.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	42	Mean	49.11
Maximum	58.2	Median	49.4
SD	6.581	Std. Error of Mean	2.194
Coefficient of Variation	0.134	Skewness	0.265
Mean of logged Data	3.886	SD of logged Data	0.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.19	95% Adjusted-CLT UCL (Chen-1995)	52.93
		95% Modified-t UCL (Johnson-1978)	53.22

Nonparametric Distribution Free UCLs

95% CLT UCL	52.72	95% Jackknife UCL	53.19
95% Standard Bootstrap UCL	52.41	95% Bootstrap-t UCL	53.44
95% Hall's Bootstrap UCL	52.01	95% Percentile Bootstrap UCL	52.48
95% BCA Bootstrap UCL	52.66		
90% Chebyshev(Mean, Sd) UCL	55.69	95% Chebyshev(Mean, Sd) UCL	58.67
97.5% Chebyshev(Mean, Sd) UCL	62.81	99% Chebyshev(Mean, Sd) UCL	70.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.58	Mean	0.896
Maximum	0.985	Median	0.955
SD	0.135	Std. Error of Mean	0.0449
Coefficient of Variation	0.15	Skewness	-2.045
Mean of logged Data	-0.122	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.98	95% Adjusted-CLT UCL (Chen-1995)	0.938
		95% Modified-t UCL (Johnson-1978)	0.975

Nonparametric Distribution Free UCLs

95% CLT UCL	0.97	95% Jackknife UCL	0.98
95% Standard Bootstrap UCL	0.967	95% Bootstrap-t UCL	0.957
95% Hall's Bootstrap UCL	0.948	95% Percentile Bootstrap UCL	0.958
95% BCA Bootstrap UCL	0.948		
90% Chebyshev(Mean, Sd) UCL	1.031	95% Chebyshev(Mean, Sd) UCL	1.092
97.5% Chebyshev(Mean, Sd) UCL	1.177	99% Chebyshev(Mean, Sd) UCL	1.343

Suggested UCL to Use

95% Student's-t UCL	0.98	or 95% Modified-t UCL	0.975

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.387	Mean	0.496
Maximum	0.525	Median	0.51
SD	0.0428	Std. Error of Mean	0.0143
Coefficient of Variation	0.0862	Skewness	-2.565
Mean of logged Data	-0.704	SD of logged Data	0.095

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.523	95% Adjusted-CLT UCL (Chen-1995)	0.507
		95% Modified-t UCL (Johnson-1978)	0.521

Nonparametric Distribution Free UCLs

95% CLT UCL	0.52	95% Jackknife UCL	0.523
95% Standard Bootstrap UCL	0.518	95% Bootstrap-t UCL	0.515
95% Hall's Bootstrap UCL	0.511	95% Percentile Bootstrap UCL	0.514
95% BCA Bootstrap UCL	0.512		
90% Chebyshev(Mean, Sd) UCL	0.539	95% Chebyshev(Mean, Sd) UCL	0.559
97.5% Chebyshev(Mean, Sd) UCL	0.585	99% Chebyshev(Mean, Sd) UCL	0.638

Suggested UCL to Use

95% Student's-t UCL	0.523	or 95% Modified-t UCL	0.521

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.98	Mean	2.067
Maximum	2.135	Median	2.065
SD	0.0527	Std. Error of Mean	0.0176
Coefficient of Variation	0.0255	Skewness	-0.118
Mean of logged Data	0.726	SD of logged Data	0.0256

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.099	95% Adjusted-CLT UCL (Chen-1995)	2.095
		95% Modified-t UCL (Johnson-1978)	2.099

Nonparametric Distribution Free UCLs

95% CLT UCL	2.096	95% Jackknife UCL	2.099
95% Standard Bootstrap UCL	2.093	95% Bootstrap-t UCL	2.099
95% Hall's Bootstrap UCL	2.093	95% Percentile Bootstrap UCL	2.092
95% BCA Bootstrap UCL	2.092		
90% Chebyshev(Mean, Sd) UCL	2.119	95% Chebyshev(Mean, Sd) UCL	2.143
97.5% Chebyshev(Mean, Sd) UCL	2.176	99% Chebyshev(Mean, Sd) UCL	2.242

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.98	Mean	3.002
Maximum	10.6	Median	2.04
SD	2.85	Std. Error of Mean	0.95
Coefficient of Variation	0.949	Skewness	2.998
Mean of logged Data	0.901	SD of logged Data	0.548

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.769	95% Adjusted-CLT UCL (Chen-1995)	5.579
		95% Modified-t UCL (Johnson-1978)	4.927

Nonparametric Distribution Free UCLs

95% CLT UCL	4.565	95% Jackknife UCL	4.769
95% Standard Bootstrap UCL	4.443	95% Bootstrap-t UCL	68.55
95% Hall's Bootstrap UCL	41.94	95% Percentile Bootstrap UCL	4.894
95% BCA Bootstrap UCL	5.849		
90% Chebyshev(Mean, Sd) UCL	5.852	95% Chebyshev(Mean, Sd) UCL	7.143
97.5% Chebyshev(Mean, Sd) UCL	8.934	99% Chebyshev(Mean, Sd) UCL	12.45

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.143

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.45	Mean	2.969
Maximum	8.18	Median	2.135
SD	2.077	Std. Error of Mean	0.692
Coefficient of Variation	0.699	Skewness	2.391
Mean of logged Data	0.942	SD of logged Data	0.525

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.257	95% Adjusted-CLT UCL (Chen-1995)	4.698
		95% Modified-t UCL (Johnson-1978)	4.349

Nonparametric Distribution Free UCLs

95% CLT UCL	4.108	95% Jackknife UCL	4.257
95% Standard Bootstrap UCL	4.063	95% Bootstrap-t UCL	6.59
95% Hall's Bootstrap UCL	8.723	95% Percentile Bootstrap UCL	4.197
95% BCA Bootstrap UCL	4.734		
90% Chebyshev(Mean, Sd) UCL	5.046	95% Chebyshev(Mean, Sd) UCL	5.987
97.5% Chebyshev(Mean, Sd) UCL	7.293	99% Chebyshev(Mean, Sd) UCL	9.858

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.045	Mean	5.373
Maximum	21.9	Median	3.285
SD	6.205	Std. Error of Mean	2.068
Coefficient of Variation	1.155	Skewness	2.986
Mean of logged Data	1.403	SD of logged Data	0.638

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.22	95% Adjusted-CLT UCL (Chen-1995)	10.98
		95% Modified-t UCL (Johnson-1978)	9.563

Nonparametric Distribution Free UCLs

95% CLT UCL	8.776	95% Jackknife UCL	9.22
95% Standard Bootstrap UCL	8.557	95% Bootstrap-t UCL	103.7
95% Hall's Bootstrap UCL	44.15	95% Percentile Bootstrap UCL	9.456
95% BCA Bootstrap UCL	11.46		
90% Chebyshev(Mean, Sd) UCL	11.58	95% Chebyshev(Mean, Sd) UCL	14.39
97.5% Chebyshev(Mean, Sd) UCL	18.29	99% Chebyshev(Mean, Sd) UCL	25.95

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.39

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.045	Mean	3.428
Maximum	5.45	Median	3.18
SD	0.763	Std. Error of Mean	0.254
Coefficient of Variation	0.222	Skewness	2.937
Mean of logged Data	1.215	SD of logged Data	0.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.9	95% Adjusted-CLT UCL (Chen-1995)	4.112
		95% Modified-t UCL (Johnson-1978)	3.942

Nonparametric Distribution Free UCLs

95% CLT UCL	3.846	95% Jackknife UCL	3.9
95% Standard Bootstrap UCL	3.813	95% Bootstrap-t UCL	6.479
95% Hall's Bootstrap UCL	6.021	95% Percentile Bootstrap UCL	3.921
95% BCA Bootstrap UCL	4.172		
90% Chebyshev(Mean, Sd) UCL	4.19	95% Chebyshev(Mean, Sd) UCL	4.536
97.5% Chebyshev(Mean, Sd) UCL	5.015	99% Chebyshev(Mean, Sd) UCL	5.957

Suggested UCL to Use

95% Student's-t UCL	3.9	or 95% Modified-t UCL	3.942

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.98	Mean	2.721
Maximum	7.98	Median	2.065
SD	1.973	Std. Error of Mean	0.658
Coefficient of Variation	0.725	Skewness	2.996
Mean of logged Data	0.874	SD of logged Data	0.452

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.943	95% Adjusted-CLT UCL (Chen-1995)	4.504
		95% Modified-t UCL (Johnson-1978)	4.053

Nonparametric Distribution Free UCLs

95% CLT UCL	3.802	95% Jackknife UCL	3.943
95% Standard Bootstrap UCL	3.704	95% Bootstrap-t UCL	35.15
95% Hall's Bootstrap UCL	17.52	95% Percentile Bootstrap UCL	4.032
95% BCA Bootstrap UCL	4.686		
90% Chebyshev(Mean, Sd) UCL	4.694	95% Chebyshev(Mean, Sd) UCL	5.587
97.5% Chebyshev(Mean, Sd) UCL	6.828	99% Chebyshev(Mean, Sd) UCL	9.264

Suggested UCL to Use

95% Student's-t UCL	3.943	or 95% Modified-t UCL	4.053

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.98	Mean	4.442
Maximum	21.6	Median	2.135
SD	6.443	Std. Error of Mean	2.148
Coefficient of Variation	1.45	Skewness	2.984
Mean of logged Data	1.072	SD of logged Data	0.763

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.436	95% Adjusted-CLT UCL (Chen-1995)	10.26
		95% Modified-t UCL (Johnson-1978)	8.792

Nonparametric Distribution Free UCLs

95% CLT UCL	7.975	95% Jackknife UCL	8.436
95% Standard Bootstrap UCL	7.71	95% Bootstrap-t UCL	71.44
95% Hall's Bootstrap UCL	44	95% Percentile Bootstrap UCL	8.68
95% BCA Bootstrap UCL	10.8		
90% Chebyshev(Mean, Sd) UCL	10.89	95% Chebyshev(Mean, Sd) UCL	13.8
97.5% Chebyshev(Mean, Sd) UCL	17.85	99% Chebyshev(Mean, Sd) UCL	25.81

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.045	Mean	3.18
Maximum	3.285	Median	3.18
SD	0.0812	Std. Error of Mean	0.0271
Coefficient of Variation	0.0255	Skewness	-0.149
Mean of logged Data	1.157	SD of logged Data	0.0256

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.23	95% Adjusted-CLT UCL (Chen-1995)	3.223
		95% Modified-t UCL (Johnson-1978)	3.23

Nonparametric Distribution Free UCLs

95% CLT UCL	3.225	95% Jackknife UCL	3.23
95% Standard Bootstrap UCL	3.222	95% Bootstrap-t UCL	3.23
95% Hall's Bootstrap UCL	3.22	95% Percentile Bootstrap UCL	3.222
95% BCA Bootstrap UCL	3.222		
90% Chebyshev(Mean, Sd) UCL	3.261	95% Chebyshev(Mean, Sd) UCL	3.298
97.5% Chebyshev(Mean, Sd) UCL	3.349	99% Chebyshev(Mean, Sd) UCL	3.449

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	3.717
Maximum	10.9	Median	2.38
SD	2.848	Std. Error of Mean	0.949
Coefficient of Variation	0.766	Skewness	2.448
Mean of logged Data	1.144	SD of logged Data	0.556

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.483	95% Adjusted-CLT UCL (Chen-1995)	6.107
		95% Modified-t UCL (Johnson-1978)	5.612

Nonparametric Distribution Free UCLs

95% CLT UCL	5.279	95% Jackknife UCL	5.483
95% Standard Bootstrap UCL	5.208	95% Bootstrap-t UCL	9.09
95% Hall's Bootstrap UCL	10.8	95% Percentile Bootstrap UCL	5.331
95% BCA Bootstrap UCL	6.214		
90% Chebyshev(Mean, Sd) UCL	6.566	95% Chebyshev(Mean, Sd) UCL	7.856
97.5% Chebyshev(Mean, Sd) UCL	9.646	99% Chebyshev(Mean, Sd) UCL	13.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.22	Mean	1.272
Maximum	1.315	Median	1.27
SD	0.0327	Std. Error of Mean	0.0109
Coefficient of Variation	0.0257	Skewness	-0.05
Mean of logged Data	0.24	SD of logged Data	0.0257

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.292	95% Adjusted-CLT UCL (Chen-1995)	1.29
		95% Modified-t UCL (Johnson-1978)	1.292

Nonparametric Distribution Free UCLs

95% CLT UCL	1.29	95% Jackknife UCL	1.292
95% Standard Bootstrap UCL	1.289	95% Bootstrap-t UCL	1.293
95% Hall's Bootstrap UCL	1.289	95% Percentile Bootstrap UCL	1.289
95% BCA Bootstrap UCL	1.289		
90% Chebyshev(Mean, Sd) UCL	1.305	95% Chebyshev(Mean, Sd) UCL	1.32
97.5% Chebyshev(Mean, Sd) UCL	1.34	99% Chebyshev(Mean, Sd) UCL	1.381

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.12	Mean	3.548
Maximum	8.22	Median	3.14
SD	1.795	Std. Error of Mean	0.598
Coefficient of Variation	0.506	Skewness	2.714
Mean of logged Data	1.191	SD of logged Data	0.373

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.66	95% Adjusted-CLT UCL (Chen-1995)	5.11
		95% Modified-t UCL (Johnson-1978)	4.751

Nonparametric Distribution Free UCLs

95% CLT UCL	4.532	95% Jackknife UCL	4.66
95% Standard Bootstrap UCL	4.495	95% Bootstrap-t UCL	7.157
95% Hall's Bootstrap UCL	10.1	95% Percentile Bootstrap UCL	4.661
95% BCA Bootstrap UCL	5.169		
90% Chebyshev(Mean, Sd) UCL	5.343	95% Chebyshev(Mean, Sd) UCL	6.156
97.5% Chebyshev(Mean, Sd) UCL	7.284	99% Chebyshev(Mean, Sd) UCL	9.501

Suggested UCL to Use

95% Student's-t UCL	4.66	or 95% Modified-t UCL	4.751

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.765	Mean	1.192
Maximum	1.8	Median	1.07
SD	0.371	Std. Error of Mean	0.124
Coefficient of Variation	0.311	Skewness	0.987
Mean of logged Data	0.136	SD of logged Data	0.292

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.421	95% Adjusted-CLT UCL (Chen-1995)	1.438
		95% Modified-t UCL (Johnson-1978)	1.428

Nonparametric Distribution Free UCLs

95% CLT UCL	1.395	95% Jackknife UCL	1.421
95% Standard Bootstrap UCL	1.386	95% Bootstrap-t UCL	1.612
95% Hall's Bootstrap UCL	1.712	95% Percentile Bootstrap UCL	1.388
95% BCA Bootstrap UCL	1.431		
90% Chebyshev(Mean, Sd) UCL	1.562	95% Chebyshev(Mean, Sd) UCL	1.73
97.5% Chebyshev(Mean, Sd) UCL	1.963	99% Chebyshev(Mean, Sd) UCL	2.421

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.21	Mean	3.067
Maximum	3.285	Median	3.14
SD	0.331	Std. Error of Mean	0.11
Coefficient of Variation	0.108	Skewness	-2.672
Mean of logged Data	1.115	SD of logged Data	0.123

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.272	95% Adjusted-CLT UCL (Chen-1995)	3.144
		95% Modified-t UCL (Johnson-1978)	3.256

Nonparametric Distribution Free UCLs

95% CLT UCL	3.249	95% Jackknife UCL	3.272
95% Standard Bootstrap UCL	3.241	95% Bootstrap-t UCL	3.207
95% Hall's Bootstrap UCL	3.175	95% Percentile Bootstrap UCL	3.202
95% BCA Bootstrap UCL	3.185		
90% Chebyshev(Mean, Sd) UCL	3.398	95% Chebyshev(Mean, Sd) UCL	3.548
97.5% Chebyshev(Mean, Sd) UCL	3.757	99% Chebyshev(Mean, Sd) UCL	4.165

Suggested UCL to Use

95% Student's-t UCL	3.272	or 95% Modified-t UCL	3.256

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.09	Mean	3.857
Maximum	10.3	Median	3.125
SD	2.499	Std. Error of Mean	0.833
Coefficient of Variation	0.648	Skewness	2.631
Mean of logged Data	1.231	SD of logged Data	0.466

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.406	95% Adjusted-CLT UCL (Chen-1995)	6.008
		95% Modified-t UCL (Johnson-1978)	5.528

Nonparametric Distribution Free UCLs

95% CLT UCL	5.228	95% Jackknife UCL	5.406
95% Standard Bootstrap UCL	5.148	95% Bootstrap-t UCL	8.969
95% Hall's Bootstrap UCL	12.05	95% Percentile Bootstrap UCL	5.416
95% BCA Bootstrap UCL	6.017		
90% Chebyshev(Mean, Sd) UCL	6.356	95% Chebyshev(Mean, Sd) UCL	7.488
97.5% Chebyshev(Mean, Sd) UCL	9.06	99% Chebyshev(Mean, Sd) UCL	12.15

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:43:16 PM
From File	38002N_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.9	Mean	15.41
Maximum	17.8	Median	15.6
SD	1.767	Std. Error of Mean	0.589
Coefficient of Variation	0.115	Skewness	-0.126
Mean of logged Data	2.729	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.51	95% Adjusted-CLT UCL (Chen-1995)	16.35
		95% Modified-t UCL (Johnson-1978)	16.5

Nonparametric Distribution Free UCLs

95% CLT UCL	16.38	95% Jackknife UCL	16.51
95% Standard Bootstrap UCL	16.31	95% Bootstrap-t UCL	16.49
95% Hall's Bootstrap UCL	16.27	95% Percentile Bootstrap UCL	16.34
95% BCA Bootstrap UCL	16.33		
90% Chebyshev(Mean, Sd) UCL	17.18	95% Chebyshev(Mean, Sd) UCL	17.98
97.5% Chebyshev(Mean, Sd) UCL	19.09	99% Chebyshev(Mean, Sd) UCL	21.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.6	Mean	12.89
Maximum	15.5	Median	12.5
SD	1.257	Std. Error of Mean	0.419
Coefficient of Variation	0.0976	Skewness	1.239

Mean of logged Data	2.552	SD of logged Data	0.0938

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.67	95% Adjusted-CLT UCL (Chen-1995)	13.76
		95% Modified-t UCL (Johnson-1978)	13.7

Nonparametric Distribution Free UCLs

95% CLT UCL	13.58	95% Jackknife UCL	13.67
95% Standard Bootstrap UCL	13.54	95% Bootstrap-t UCL	14.11
95% Hall's Bootstrap UCL	13.89	95% Percentile Bootstrap UCL	13.58
95% BCA Bootstrap UCL	13.74		
90% Chebyshev(Mean, Sd) UCL	14.15	95% Chebyshev(Mean, Sd) UCL	14.72
97.5% Chebyshev(Mean, Sd) UCL	15.51	99% Chebyshev(Mean, Sd) UCL	17.06

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	50.3	Mean	55.42
Maximum	62.3	Median	53.6
SD	4.49	Std. Error of Mean	1.497
Coefficient of Variation	0.081	Skewness	0.687
Mean of logged Data	4.012	SD of logged Data	0.0795

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.21	95% Adjusted-CLT UCL (Chen-1995)	58.25
		95% Modified-t UCL (Johnson-1978)	58.26

Nonparametric Distribution Free UCLs

95% CLT UCL	57.88	95% Jackknife UCL	58.21
95% Standard Bootstrap UCL	57.78	95% Bootstrap-t UCL	58.83
95% Hall's Bootstrap UCL	57.75	95% Percentile Bootstrap UCL	57.84
95% BCA Bootstrap UCL	57.98		
90% Chebyshev(Mean, Sd) UCL	59.91	95% Chebyshev(Mean, Sd) UCL	61.95
97.5% Chebyshev(Mean, Sd) UCL	64.77	99% Chebyshev(Mean, Sd) UCL	70.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.915	Mean	1.053
Maximum	1.63	Median	0.99
SD	0.218	Std. Error of Mean	0.0727
Coefficient of Variation	0.207	Skewness	2.907
Mean of logged Data	0.0369	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.188	95% Adjusted-CLT UCL (Chen-1995)	1.248
		95% Modified-t UCL (Johnson-1978)	1.2

Nonparametric Distribution Free UCLs

95% CLT UCL	1.173	95% Jackknife UCL	1.188
95% Standard Bootstrap UCL	1.167	95% Bootstrap-t UCL	2.282
95% Hall's Bootstrap UCL	2.029	95% Percentile Bootstrap UCL	1.192
95% BCA Bootstrap UCL	1.208		
90% Chebyshev(Mean, Sd) UCL	1.271	95% Chebyshev(Mean, Sd) UCL	1.37
97.5% Chebyshev(Mean, Sd) UCL	1.507	99% Chebyshev(Mean, Sd) UCL	1.776

Suggested UCL to Use

95% Student's-t UCL	1.188	or 95% Modified-t UCL	1.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.488	Mean	1.728
Maximum	11.2	Median	0.53
SD	3.552	Std. Error of Mean	1.184
Coefficient of Variation	2.055	Skewness	2.998
Mean of logged Data	-0.278	SD of logged Data	1.016

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.93	95% Adjusted-CLT UCL (Chen-1995)	4.941
		95% Modified-t UCL (Johnson-1978)	4.128

Nonparametric Distribution Free UCLs

95% CLT UCL	3.676	95% Jackknife UCL	3.93
95% Standard Bootstrap UCL	3.637	95% Bootstrap-t UCL	291.4
95% Hall's Bootstrap UCL	194.1	95% Percentile Bootstrap UCL	4.083
95% BCA Bootstrap UCL	5.268		
90% Chebyshev(Mean, Sd) UCL	5.281	95% Chebyshev(Mean, Sd) UCL	6.89
97.5% Chebyshev(Mean, Sd) UCL	9.123	99% Chebyshev(Mean, Sd) UCL	13.51

Suggested UCL to Use

95% Hall's Bootstrap UCL	194.1

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	4.27
Maximum	21.7	Median	2.14
SD	6.537	Std. Error of Mean	2.179
Coefficient of Variation	1.531	Skewness	2.999
Mean of logged Data	0.997	SD of logged Data	0.781

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.322	95% Adjusted-CLT UCL (Chen-1995)	10.18
		95% Modified-t UCL (Johnson-1978)	8.685

Nonparametric Distribution Free UCLs

95% CLT UCL	7.854	95% Jackknife UCL	8.322
95% Standard Bootstrap UCL	7.672	95% Bootstrap-t UCL	250.4
95% Hall's Bootstrap UCL	198.5	95% Percentile Bootstrap UCL	8.619
95% BCA Bootstrap UCL	8.665		
90% Chebyshev(Mean, Sd) UCL	10.81	95% Chebyshev(Mean, Sd) UCL	13.77
97.5% Chebyshev(Mean, Sd) UCL	17.88	99% Chebyshev(Mean, Sd) UCL	25.95

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.77

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	7.478
Maximum	45.9	Median	2.155
SD	14.45	Std. Error of Mean	4.817
Coefficient of Variation	1.932	Skewness	2.968
Mean of logged Data	1.245	SD of logged Data	1.021

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.43	95% Adjusted-CLT UCL (Chen-1995)	20.49
		95% Modified-t UCL (Johnson-1978)	17.23

Nonparametric Distribution Free UCLs

95% CLT UCL	15.4	95% Jackknife UCL	16.43
95% Standard Bootstrap UCL	15.11	95% Bootstrap-t UCL	190
95% Hall's Bootstrap UCL	189.6	95% Percentile Bootstrap UCL	16.84
95% BCA Bootstrap UCL	21.94		
90% Chebyshev(Mean, Sd) UCL	21.93	95% Chebyshev(Mean, Sd) UCL	28.47
97.5% Chebyshev(Mean, Sd) UCL	37.56	99% Chebyshev(Mean, Sd) UCL	55.4

Suggested UCL to Use

95% Hall's Bootstrap UCL	189.6

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.57	Mean	7.217
Maximum	44.2	Median	2.14
SD	13.95	Std. Error of Mean	4.65
Coefficient of Variation	1.933	Skewness	2.937

Mean of logged Data	1.176	SD of logged Data	1.059

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.86	95% Adjusted-CLT UCL (Chen-1995)	19.73
		95% Modified-t UCL (Johnson-1978)	16.62

Nonparametric Distribution Free UCLs

95% CLT UCL	14.87	95% Jackknife UCL	15.86
95% Standard Bootstrap UCL	14.45	95% Bootstrap-t UCL	386.5
95% Hall's Bootstrap UCL	367.4	95% Percentile Bootstrap UCL	16.08
95% BCA Bootstrap UCL	21.24		
90% Chebyshev(Mean, Sd) UCL	21.17	95% Chebyshev(Mean, Sd) UCL	27.49
97.5% Chebyshev(Mean, Sd) UCL	36.26	99% Chebyshev(Mean, Sd) UCL	53.48

Suggested UCL to Use

95% Hall's Bootstrap UCL 367.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	10.14
Maximum	55.2	Median	3.315
SD	17.06	Std. Error of Mean	5.685
Coefficient of Variation	1.682	Skewness	2.9
Mean of logged Data	1.697	SD of logged Data	0.959

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.71	95% Adjusted-CLT UCL (Chen-1995)	25.36
		95% Modified-t UCL (Johnson-1978)	21.63

Nonparametric Distribution Free UCLs

95% CLT UCL	19.49	95% Jackknife UCL	20.71
95% Standard Bootstrap UCL	18.81	95% Bootstrap-t UCL	107.4
95% Hall's Bootstrap UCL	108.5	95% Percentile Bootstrap UCL	20.97

95% BCA Bootstrap UCL	23.15		
90% Chebyshev(Mean, Sd) UCL	27.19	95% Chebyshev(Mean, Sd) UCL	34.92
97.5% Chebyshev(Mean, Sd) UCL	45.64	99% Chebyshev(Mean, Sd) UCL	66.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	34.92

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	5.591
Maximum	22.6	Median	3.315
SD	6.4	Std. Error of Mean	2.133
Coefficient of Variation	1.145	Skewness	2.963
Mean of logged Data	1.443	SD of logged Data	0.642

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.558	95% Adjusted-CLT UCL (Chen-1995)	11.35
		95% Modified-t UCL (Johnson-1978)	9.909

Nonparametric Distribution Free UCLs

95% CLT UCL	9.1	95% Jackknife UCL	9.558
95% Standard Bootstrap UCL	8.882	95% Bootstrap-t UCL	163.3
95% Hall's Bootstrap UCL	144.1	95% Percentile Bootstrap UCL	9.719
95% BCA Bootstrap UCL	11.82		
90% Chebyshev(Mean, Sd) UCL	11.99	95% Chebyshev(Mean, Sd) UCL	14.89
97.5% Chebyshev(Mean, Sd) UCL	18.91	99% Chebyshev(Mean, Sd) UCL	26.82

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.89

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	5.024
Maximum	24.7	Median	2.155
SD	7.433	Std. Error of Mean	2.478
Coefficient of Variation	1.48	Skewness	2.92

Mean of logged Data	1.153	SD of logged Data	0.82

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.631	95% Adjusted-CLT UCL (Chen-1995)	11.68
		95% Modified-t UCL (Johnson-1978)	10.03

Nonparametric Distribution Free UCLs

95% CLT UCL	9.099	95% Jackknife UCL	9.631
95% Standard Bootstrap UCL	8.972	95% Bootstrap-t UCL	74.16
95% Hall's Bootstrap UCL	68.99	95% Percentile Bootstrap UCL	9.732
95% BCA Bootstrap UCL	12.56		
90% Chebyshev(Mean, Sd) UCL	12.46	95% Chebyshev(Mean, Sd) UCL	15.82
97.5% Chebyshev(Mean, Sd) UCL	20.5	99% Chebyshev(Mean, Sd) UCL	29.68

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	15.82

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	7.388
Maximum	42.2	Median	2.155
SD	13.16	Std. Error of Mean	4.387
Coefficient of Variation	1.781	Skewness	2.911
Mean of logged Data	1.303	SD of logged Data	1.015

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.55	95% Adjusted-CLT UCL (Chen-1995)	19.15
		95% Modified-t UCL (Johnson-1978)	16.26

Nonparametric Distribution Free UCLs

95% CLT UCL	14.6	95% Jackknife UCL	15.55
95% Standard Bootstrap UCL	14.11	95% Bootstrap-t UCL	80.77
95% Hall's Bootstrap UCL	81.65	95% Percentile Bootstrap UCL	15.78
95% BCA Bootstrap UCL	19.93		
90% Chebyshev(Mean, Sd) UCL	20.55	95% Chebyshev(Mean, Sd) UCL	26.51
97.5% Chebyshev(Mean, Sd) UCL	34.79	99% Chebyshev(Mean, Sd) UCL	51.04

Suggested UCL to Use

95% Hall's Bootstrap UCL	81.65

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.97	Mean	3.61
Maximum	6.76	Median	3.29
SD	1.188	Std. Error of Mean	0.396
Coefficient of Variation	0.329	Skewness	2.933
Mean of logged Data	1.25	SD of logged Data	0.251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.346	95% Adjusted-CLT UCL (Chen-1995)	4.675
		95% Modified-t UCL (Johnson-1978)	4.411

Nonparametric Distribution Free UCLs

95% CLT UCL	4.261	95% Jackknife UCL	4.346
95% Standard Bootstrap UCL	4.22	95% Bootstrap-t UCL	8.215
95% Hall's Bootstrap UCL	9.83	95% Percentile Bootstrap UCL	4.385
95% BCA Bootstrap UCL	4.777		
90% Chebyshev(Mean, Sd) UCL	4.798	95% Chebyshev(Mean, Sd) UCL	5.336
97.5% Chebyshev(Mean, Sd) UCL	6.083	99% Chebyshev(Mean, Sd) UCL	7.55

Suggested UCL to Use

95% Student's-t UCL	4.346	or 95% Modified-t UCL	4.411

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	15.24
Maximum	104	Median	2.165
SD	33.44	Std. Error of Mean	11.15
Coefficient of Variation	2.194	Skewness	2.948

Mean of logged Data	1.577	SD of logged Data	1.31

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.97	95% Adjusted-CLT UCL (Chen-1995)	45.28
		95% Modified-t UCL (Johnson-1978)	37.8

Nonparametric Distribution Free UCLs

95% CLT UCL	33.58	95% Jackknife UCL	35.97
95% Standard Bootstrap UCL	32.44	95% Bootstrap-t UCL	262.3
95% Hall's Bootstrap UCL	187.8	95% Percentile Bootstrap UCL	37.15
95% BCA Bootstrap UCL	48.65		
90% Chebyshev(Mean, Sd) UCL	48.68	95% Chebyshev(Mean, Sd) UCL	63.83
97.5% Chebyshev(Mean, Sd) UCL	84.85	99% Chebyshev(Mean, Sd) UCL	126.2

Suggested UCL to Use

95% Hall's Bootstrap UCL	187.8

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.19	Mean	2.3
Maximum	10.4	Median	1.315
SD	3.038	Std. Error of Mean	1.013
Coefficient of Variation	1.321	Skewness	2.998
Mean of logged Data	0.484	SD of logged Data	0.698

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.183	95% Adjusted-CLT UCL (Chen-1995)	5.047
		95% Modified-t UCL (Johnson-1978)	4.352

Nonparametric Distribution Free UCLs

95% CLT UCL	3.966	95% Jackknife UCL	4.183
95% Standard Bootstrap UCL	3.808	95% Bootstrap-t UCL	89.06
95% Hall's Bootstrap UCL	74.84	95% Percentile Bootstrap UCL	4.316

95% BCA Bootstrap UCL	5.331		
90% Chebyshev(Mean, Sd) UCL	5.338	95% Chebyshev(Mean, Sd) UCL	6.714
97.5% Chebyshev(Mean, Sd) UCL	8.624	99% Chebyshev(Mean, Sd) UCL	12.38

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.714

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	6.566
Maximum	29.5	Median	3.315
SD	8.649	Std. Error of Mean	2.883
Coefficient of Variation	1.317	Skewness	2.938
Mean of logged Data	1.517	SD of logged Data	0.73

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.93	95% Adjusted-CLT UCL (Chen-1995)	14.32
		95% Modified-t UCL (Johnson-1978)	12.4

Nonparametric Distribution Free UCLs

95% CLT UCL	11.31	95% Jackknife UCL	11.93
95% Standard Bootstrap UCL	11.01	95% Bootstrap-t UCL	103.2
95% Hall's Bootstrap UCL	92.52	95% Percentile Bootstrap UCL	12.12
95% BCA Bootstrap UCL	15.19		
90% Chebyshev(Mean, Sd) UCL	15.21	95% Chebyshev(Mean, Sd) UCL	19.13
97.5% Chebyshev(Mean, Sd) UCL	24.57	99% Chebyshev(Mean, Sd) UCL	35.25

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.13

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.915	Mean	1.533
Maximum	2.81	Median	0.995
SD	0.848	Std. Error of Mean	0.283
Coefficient of Variation	0.553	Skewness	0.912

Mean of logged Data	0.306	SD of logged Data	0.503

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.058	95% Adjusted-CLT UCL (Chen-1995)	2.089
		95% Modified-t UCL (Johnson-1978)	2.072

Nonparametric Distribution Free UCLs

95% CLT UCL	1.997	95% Jackknife UCL	2.058
95% Standard Bootstrap UCL	1.978	95% Bootstrap-t UCL	2.236
95% Hall's Bootstrap UCL	1.81	95% Percentile Bootstrap UCL	1.948
95% BCA Bootstrap UCL	2.052		
90% Chebyshev(Mean, Sd) UCL	2.38	95% Chebyshev(Mean, Sd) UCL	2.764
97.5% Chebyshev(Mean, Sd) UCL	3.297	99% Chebyshev(Mean, Sd) UCL	4.344

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.764

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	14.57
Maximum	99.7	Median	3.315
SD	31.95	Std. Error of Mean	10.65
Coefficient of Variation	2.194	Skewness	2.99
Mean of logged Data	1.688	SD of logged Data	1.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.37	95% Adjusted-CLT UCL (Chen-1995)	43.43
		95% Modified-t UCL (Johnson-1978)	36.14

Nonparametric Distribution Free UCLs

95% CLT UCL	32.09	95% Jackknife UCL	34.37
95% Standard Bootstrap UCL	31.51	95% Bootstrap-t UCL	703.4
95% Hall's Bootstrap UCL	671.1	95% Percentile Bootstrap UCL	35.56
95% BCA Bootstrap UCL	46.58		
90% Chebyshev(Mean, Sd) UCL	46.52	95% Chebyshev(Mean, Sd) UCL	60.99
97.5% Chebyshev(Mean, Sd) UCL	81.08	99% Chebyshev(Mean, Sd) UCL	120.5

Suggested UCL to Use

95% Hall's Bootstrap UCL 671.1

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.9	Mean	13.54
Maximum	87	Median	3.315
SD	27.64	Std. Error of Mean	9.212
Coefficient of Variation	2.041	Skewness	2.963
Mean of logged Data	1.721	SD of logged Data	1.104

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.67	95% Adjusted-CLT UCL (Chen-1995)	38.42
		95% Modified-t UCL (Johnson-1978)	32.19

Nonparametric Distribution Free UCLs

95% CLT UCL	28.7	95% Jackknife UCL	30.67
95% Standard Bootstrap UCL	28.1	95% Bootstrap-t UCL	312
95% Hall's Bootstrap UCL	300.6	95% Percentile Bootstrap UCL	31.45
95% BCA Bootstrap UCL	41.09		
90% Chebyshev(Mean, Sd) UCL	41.18	95% Chebyshev(Mean, Sd) UCL	53.7
97.5% Chebyshev(Mean, Sd) UCL	71.08	99% Chebyshev(Mean, Sd) UCL	105.2

Suggested UCL to Use

95% Hall's Bootstrap UCL 300.6

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:44:27 PM
From File	38002O_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	13.1	Mean	26.14
Maximum	104	Median	17
SD	29.23	Std. Error of Mean	9.743
Coefficient of Variation	1.118	Skewness	2.987
Mean of logged Data	3	SD of logged Data	0.623

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	44.26	95% Adjusted-CLT UCL (Chen-1995)	52.53
		95% Modified-t UCL (Johnson-1978)	45.88

Nonparametric Distribution Free UCLs

95% CLT UCL	42.17	95% Jackknife UCL	44.26
95% Standard Bootstrap UCL	41.1	95% Bootstrap-t UCL	473.2
95% Hall's Bootstrap UCL	271.1	95% Percentile Bootstrap UCL	45.43
95% BCA Bootstrap UCL	46.1		
90% Chebyshev(Mean, Sd) UCL	55.37	95% Chebyshev(Mean, Sd) UCL	68.61
97.5% Chebyshev(Mean, Sd) UCL	86.99	99% Chebyshev(Mean, Sd) UCL	123.1

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	68.61

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.9	Mean	13.24
Maximum	18.2	Median	12.8
SD	1.9	Std. Error of Mean	0.633
Coefficient of Variation	0.143	Skewness	2.747
Mean of logged Data	2.576	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.42	95% Adjusted-CLT UCL (Chen-1995)	14.91
		95% Modified-t UCL (Johnson-1978)	14.52

Nonparametric Distribution Free UCLs

95% CLT UCL	14.29	95% Jackknife UCL	14.42
95% Standard Bootstrap UCL	14.2	95% Bootstrap-t UCL	17.17
95% Hall's Bootstrap UCL	19.24	95% Percentile Bootstrap UCL	14.4
95% BCA Bootstrap UCL	14.73		
90% Chebyshev(Mean, Sd) UCL	15.14	95% Chebyshev(Mean, Sd) UCL	16.01
97.5% Chebyshev(Mean, Sd) UCL	17.2	99% Chebyshev(Mean, Sd) UCL	19.55

Suggested UCL to Use

95% Student's-t UCL	14.42	or 95% Modified-t UCL	14.52

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	48	Mean	54.03
Maximum	61.5	Median	55.4
SD	4.685	Std. Error of Mean	1.562
Coefficient of Variation	0.0867	Skewness	-0.0712
Mean of logged Data	3.986	SD of logged Data	0.0873

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.94	95% Adjusted-CLT UCL (Chen-1995)	56.56
		95% Modified-t UCL (Johnson-1978)	56.93

Nonparametric Distribution Free UCLs

95% CLT UCL	56.6	95% Jackknife UCL	56.94
95% Standard Bootstrap UCL	56.52	95% Bootstrap-t UCL	56.95
95% Hall's Bootstrap UCL	56.52	95% Percentile Bootstrap UCL	56.32
95% BCA Bootstrap UCL	56.37		
90% Chebyshev(Mean, Sd) UCL	58.72	95% Chebyshev(Mean, Sd) UCL	60.84
97.5% Chebyshev(Mean, Sd) UCL	63.79	99% Chebyshev(Mean, Sd) UCL	69.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.844	Mean	0.98
Maximum	1.07	Median	0.98
SD	0.0614	Std. Error of Mean	0.0205
Coefficient of Variation	0.0626	Skewness	-1.149
Mean of logged Data	-0.0221	SD of logged Data	0.0648

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.018	95% Adjusted-CLT UCL (Chen-1995)	1.005
		95% Modified-t UCL (Johnson-1978)	1.017

Nonparametric Distribution Free UCLs

95% CLT UCL	1.014	95% Jackknife UCL	1.018
95% Standard Bootstrap UCL	1.011	95% Bootstrap-t UCL	1.011
95% Hall's Bootstrap UCL	1.012	95% Percentile Bootstrap UCL	1.01
95% BCA Bootstrap UCL	1.006		
90% Chebyshev(Mean, Sd) UCL	1.041	95% Chebyshev(Mean, Sd) UCL	1.069
97.5% Chebyshev(Mean, Sd) UCL	1.108	99% Chebyshev(Mean, Sd) UCL	1.183

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.51	Mean	0.522
Maximum	0.535	Median	0.525
SD	0.00905	Std. Error of Mean	0.00302
Coefficient of Variation	0.0173	Skewness	-0.21
Mean of logged Data	-0.65	SD of logged Data	0.0174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.528	95% Adjusted-CLT UCL (Chen-1995)	0.527
		95% Modified-t UCL (Johnson-1978)	0.528

Nonparametric Distribution Free UCLs

95% CLT UCL	0.527	95% Jackknife UCL	0.528
95% Standard Bootstrap UCL	0.527	95% Bootstrap-t UCL	0.528
95% Hall's Bootstrap UCL	0.526	95% Percentile Bootstrap UCL	0.527
95% BCA Bootstrap UCL	0.526		
90% Chebyshev(Mean, Sd) UCL	0.531	95% Chebyshev(Mean, Sd) UCL	0.535
97.5% Chebyshev(Mean, Sd) UCL	0.541	99% Chebyshev(Mean, Sd) UCL	0.552

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.065	Mean	2.118
Maximum	2.165	Median	2.125
SD	0.0333	Std. Error of Mean	0.0111
Coefficient of Variation	0.0157	Skewness	-0.296
Mean of logged Data	0.751	SD of logged Data	0.0157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.139	95% Adjusted-CLT UCL (Chen-1995)	2.135
		95% Modified-t UCL (Johnson-1978)	2.139

Nonparametric Distribution Free UCLs

95% CLT UCL	2.137	95% Jackknife UCL	2.139
95% Standard Bootstrap UCL	2.136	95% Bootstrap-t UCL	2.138
95% Hall's Bootstrap UCL	2.136	95% Percentile Bootstrap UCL	2.136
95% BCA Bootstrap UCL	2.134		
90% Chebyshev(Mean, Sd) UCL	2.152	95% Chebyshev(Mean, Sd) UCL	2.167

97.5% Chebyshev(Mean, Sd) UCL	2.188	99% Chebyshev(Mean, Sd) UCL	2.229

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	2.687
Maximum	4.79	Median	2.165
SD	0.895	Std. Error of Mean	0.298
Coefficient of Variation	0.333	Skewness	1.916
Mean of logged Data	0.948	SD of logged Data	0.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.241	95% Adjusted-CLT UCL (Chen-1995)	3.381
		95% Modified-t UCL (Johnson-1978)	3.273

Nonparametric Distribution Free UCLs

95% CLT UCL	3.177	95% Jackknife UCL	3.241
95% Standard Bootstrap UCL	3.15	95% Bootstrap-t UCL	3.828
95% Hall's Bootstrap UCL	4.747	95% Percentile Bootstrap UCL	3.184
95% BCA Bootstrap UCL	3.396		
90% Chebyshev(Mean, Sd) UCL	3.582	95% Chebyshev(Mean, Sd) UCL	3.987
97.5% Chebyshev(Mean, Sd) UCL	4.55	99% Chebyshev(Mean, Sd) UCL	5.655

Suggested UCL to Use

95% Student's-t UCL	3.241	or 95% Modified-t UCL	3.273

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	2.794
Maximum	5.01	Median	2.165
SD	1.045	Std. Error of Mean	0.348

Coefficient of Variation	0.374	Skewness	1.463
Mean of logged Data	0.975	SD of logged Data	0.328

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.442	95% Adjusted-CLT UCL (Chen-1995)	3.549
		95% Modified-t UCL (Johnson-1978)	3.47

Nonparametric Distribution Free UCLs

95% CLT UCL	3.367	95% Jackknife UCL	3.442
95% Standard Bootstrap UCL	3.343	95% Bootstrap-t UCL	3.926
95% Hall's Bootstrap UCL	3.396	95% Percentile Bootstrap UCL	3.403
95% BCA Bootstrap UCL	3.471		
90% Chebyshev(Mean, Sd) UCL	3.839	95% Chebyshev(Mean, Sd) UCL	4.312
97.5% Chebyshev(Mean, Sd) UCL	4.969	99% Chebyshev(Mean, Sd) UCL	6.259

Suggested UCL to Use

95% Student's-t UCL	3.442	or 95% Modified-t UCL	3.47

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	4.51
Maximum	8.27	Median	3.33
SD	1.848	Std. Error of Mean	0.616
Coefficient of Variation	0.41	Skewness	1.3
Mean of logged Data	1.442	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.655	95% Adjusted-CLT UCL (Chen-1995)	5.808
		95% Modified-t UCL (Johnson-1978)	5.7

Nonparametric Distribution Free UCLs

95% CLT UCL	5.523	95% Jackknife UCL	5.655
95% Standard Bootstrap UCL	5.466	95% Bootstrap-t UCL	6.347
95% Hall's Bootstrap UCL	5.407	95% Percentile Bootstrap UCL	5.422
95% BCA Bootstrap UCL	5.718		
90% Chebyshev(Mean, Sd) UCL	6.358	95% Chebyshev(Mean, Sd) UCL	7.194
97.5% Chebyshev(Mean, Sd) UCL	8.356	99% Chebyshev(Mean, Sd) UCL	10.64

Suggested UCL to Use

95% Student's-t UCL	5.655	or 95% Modified-t UCL	5.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.05	Mean	3.252
Maximum	3.33	Median	3.27
SD	0.0887	Std. Error of Mean	0.0296
Coefficient of Variation	0.0273	Skewness	-1.644
Mean of logged Data	1.179	SD of logged Data	0.0278

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.307	95% Adjusted-CLT UCL (Chen-1995)	3.283
		95% Modified-t UCL (Johnson-1978)	3.304

Nonparametric Distribution Free UCLs

95% CLT UCL	3.3	95% Jackknife UCL	3.307
95% Standard Bootstrap UCL	3.298	95% Bootstrap-t UCL	3.292
95% Hall's Bootstrap UCL	3.288	95% Percentile Bootstrap UCL	3.294
95% BCA Bootstrap UCL	3.287		
90% Chebyshev(Mean, Sd) UCL	3.34	95% Chebyshev(Mean, Sd) UCL	3.381
97.5% Chebyshev(Mean, Sd) UCL	3.436	99% Chebyshev(Mean, Sd) UCL	3.546

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	2.234
Maximum	2.94	Median	2.145
SD	0.271	Std. Error of Mean	0.0902
Coefficient of Variation	0.121	Skewness	2.772

Mean of logged Data	0.798	SD of logged Data	0.108

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.402	95% Adjusted-CLT UCL (Chen-1995)	2.471
		95% Modified-t UCL (Johnson-1978)	2.415

Nonparametric Distribution Free UCLs

95% CLT UCL	2.382	95% Jackknife UCL	2.402
95% Standard Bootstrap UCL	2.372	95% Bootstrap-t UCL	3.139
95% Hall's Bootstrap UCL	3.161	95% Percentile Bootstrap UCL	2.402
95% BCA Bootstrap UCL	2.51		
90% Chebyshev(Mean, Sd) UCL	2.504	95% Chebyshev(Mean, Sd) UCL	2.627
97.5% Chebyshev(Mean, Sd) UCL	2.797	99% Chebyshev(Mean, Sd) UCL	3.131

Suggested UCL to Use

95% Student's-t UCL	2.402	or 95% Modified-t UCL	2.415

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	3.237
Maximum	6.32	Median	2.165
SD	1.596	Std. Error of Mean	0.532
Coefficient of Variation	0.493	Skewness	1.138
Mean of logged Data	1.08	SD of logged Data	0.443

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.226	95% Adjusted-CLT UCL (Chen-1995)	4.327
		95% Modified-t UCL (Johnson-1978)	4.259

Nonparametric Distribution Free UCLs

95% CLT UCL	4.111	95% Jackknife UCL	4.226
95% Standard Bootstrap UCL	4.067	95% Bootstrap-t UCL	4.644
95% Hall's Bootstrap UCL	3.93	95% Percentile Bootstrap UCL	4.095
95% BCA Bootstrap UCL	4.243		
90% Chebyshev(Mean, Sd) UCL	4.832	95% Chebyshev(Mean, Sd) UCL	5.555
97.5% Chebyshev(Mean, Sd) UCL	6.558	99% Chebyshev(Mean, Sd) UCL	8.528

Suggested UCL to Use

95% Student's-t UCL	4.226	or 95% Modified-t UCL	4.259

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.18	Mean	3.259
Maximum	3.33	Median	3.27
SD	0.0513	Std. Error of Mean	0.0171
Coefficient of Variation	0.0157	Skewness	-0.319
Mean of logged Data	1.181	SD of logged Data	0.0158

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.291	95% Adjusted-CLT UCL (Chen-1995)	3.286
		95% Modified-t UCL (Johnson-1978)	3.291

Nonparametric Distribution Free UCLs

95% CLT UCL	3.288	95% Jackknife UCL	3.291
95% Standard Bootstrap UCL	3.286	95% Bootstrap-t UCL	3.288
95% Hall's Bootstrap UCL	3.285	95% Percentile Bootstrap UCL	3.284
95% BCA Bootstrap UCL	3.284		
90% Chebyshev(Mean, Sd) UCL	3.311	95% Chebyshev(Mean, Sd) UCL	3.334
97.5% Chebyshev(Mean, Sd) UCL	3.366	99% Chebyshev(Mean, Sd) UCL	3.429

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	4.361
Maximum	10.5	Median	2.165
SD	3.012	Std. Error of Mean	1.004
Coefficient of Variation	0.691	Skewness	1.148
Mean of logged Data	1.277	SD of logged Data	0.65

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.228	95% Adjusted-CLT UCL (Chen-1995)	6.423
		95% Modified-t UCL (Johnson-1978)	6.292

Nonparametric Distribution Free UCLs

95% CLT UCL	6.013	95% Jackknife UCL	6.228
95% Standard Bootstrap UCL	5.886	95% Bootstrap-t UCL	6.97
95% Hall's Bootstrap UCL	6.202	95% Percentile Bootstrap UCL	5.985
95% BCA Bootstrap UCL	6.241		
90% Chebyshev(Mean, Sd) UCL	7.373	95% Chebyshev(Mean, Sd) UCL	8.738
97.5% Chebyshev(Mean, Sd) UCL	10.63	99% Chebyshev(Mean, Sd) UCL	14.35

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.738

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.27	Mean	1.305
Maximum	1.335	Median	1.31
SD	0.0214	Std. Error of Mean	0.00712
Coefficient of Variation	0.0164	Skewness	-0.383
Mean of logged Data	0.266	SD of logged Data	0.0164

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.318	95% Adjusted-CLT UCL (Chen-1995)	1.316
		95% Modified-t UCL (Johnson-1978)	1.318

Nonparametric Distribution Free UCLs

95% CLT UCL	1.317	95% Jackknife UCL	1.318
95% Standard Bootstrap UCL	1.316	95% Bootstrap-t UCL	1.317
95% Hall's Bootstrap UCL	1.315	95% Percentile Bootstrap UCL	1.316
95% BCA Bootstrap UCL	1.316		
90% Chebyshev(Mean, Sd) UCL	1.326	95% Chebyshev(Mean, Sd) UCL	1.336
97.5% Chebyshev(Mean, Sd) UCL	1.349	99% Chebyshev(Mean, Sd) UCL	1.376

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	3.364
Maximum	4.22	Median	3.27
SD	0.331	Std. Error of Mean	0.11
Coefficient of Variation	0.0984	Skewness	2.652
Mean of logged Data	1.209	SD of logged Data	0.0899

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.57	95% Adjusted-CLT UCL (Chen-1995)	3.65
		95% Modified-t UCL (Johnson-1978)	3.586

Nonparametric Distribution Free UCLs

95% CLT UCL	3.546	95% Jackknife UCL	3.57
95% Standard Bootstrap UCL	3.541	95% Bootstrap-t UCL	3.979
95% Hall's Bootstrap UCL	4.404	95% Percentile Bootstrap UCL	3.565
95% BCA Bootstrap UCL	3.613		
90% Chebyshev(Mean, Sd) UCL	3.695	95% Chebyshev(Mean, Sd) UCL	3.845
97.5% Chebyshev(Mean, Sd) UCL	4.053	99% Chebyshev(Mean, Sd) UCL	4.462

Suggested UCL to Use

95% Student's-t UCL	3.57	or 95% Modified-t UCL	3.586

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.737	Mean	1.518
Maximum	2.94	Median	0.97
SD	0.973	Std. Error of Mean	0.324
Coefficient of Variation	0.641	Skewness	0.84
Mean of logged Data	0.249	SD of logged Data	0.596

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.121	95% Adjusted-CLT UCL (Chen-1995)	2.148
		95% Modified-t UCL (Johnson-1978)	2.136

Nonparametric Distribution Free UCLs

95% CLT UCL	2.051	95% Jackknife UCL	2.121
95% Standard Bootstrap UCL	2.006	95% Bootstrap-t UCL	2.222
95% Hall's Bootstrap UCL	1.84	95% Percentile Bootstrap UCL	1.995
95% BCA Bootstrap UCL	2.133		
90% Chebyshev(Mean, Sd) UCL	2.49	95% Chebyshev(Mean, Sd) UCL	2.931
97.5% Chebyshev(Mean, Sd) UCL	3.542	99% Chebyshev(Mean, Sd) UCL	4.744

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.931

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.48	Mean	3.423
Maximum	5.53	Median	3.255
SD	0.865	Std. Error of Mean	0.288
Coefficient of Variation	0.253	Skewness	2.044
Mean of logged Data	1.207	SD of logged Data	0.222

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.959	95% Adjusted-CLT UCL (Chen-1995)	4.107
		95% Modified-t UCL (Johnson-1978)	3.992

Nonparametric Distribution Free UCLs

95% CLT UCL	3.898	95% Jackknife UCL	3.959
95% Standard Bootstrap UCL	3.877	95% Bootstrap-t UCL	4.438
95% Hall's Bootstrap UCL	6.449	95% Percentile Bootstrap UCL	3.921
95% BCA Bootstrap UCL	4.069		
90% Chebyshev(Mean, Sd) UCL	4.288	95% Chebyshev(Mean, Sd) UCL	4.68
97.5% Chebyshev(Mean, Sd) UCL	5.224	99% Chebyshev(Mean, Sd) UCL	6.292

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	4.617
Maximum	8.98	Median	3.33
SD	1.993	Std. Error of Mean	0.664
Coefficient of Variation	0.432	Skewness	1.53
Mean of logged Data	1.461	SD of logged Data	0.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.852	95% Adjusted-CLT UCL (Chen-1995)	6.071
		95% Modified-t UCL (Johnson-1978)	5.908

Nonparametric Distribution Free UCLs

95% CLT UCL	5.709	95% Jackknife UCL	5.852
95% Standard Bootstrap UCL	5.659	95% Bootstrap-t UCL	6.789
95% Hall's Bootstrap UCL	6.021	95% Percentile Bootstrap UCL	5.708
95% BCA Bootstrap UCL	6.232		
90% Chebyshev(Mean, Sd) UCL	6.609	95% Chebyshev(Mean, Sd) UCL	7.512
97.5% Chebyshev(Mean, Sd) UCL	8.764	99% Chebyshev(Mean, Sd) UCL	11.23

Suggested UCL to Use

95% Student's-t UCL	5.852	or 95% Modified-t UCL	5.908

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:45:37 PM
From File	38002P_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.4	Mean	12.74
Maximum	14.8	Median	12.3
SD	1.13	Std. Error of Mean	0.377
Coefficient of Variation	0.0887	Skewness	0.841
Mean of logged Data	2.542	SD of logged Data	0.0866

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.45	95% Adjusted-CLT UCL (Chen-1995)	13.48
		95% Modified-t UCL (Johnson-1978)	13.46

Nonparametric Distribution Free UCLs

95% CLT UCL	13.36	95% Jackknife UCL	13.45
95% Standard Bootstrap UCL	13.34	95% Bootstrap-t UCL	13.78
95% Hall's Bootstrap UCL	13.54	95% Percentile Bootstrap UCL	13.37
95% BCA Bootstrap UCL	13.42		
90% Chebyshev(Mean, Sd) UCL	13.87	95% Chebyshev(Mean, Sd) UCL	14.39
97.5% Chebyshev(Mean, Sd) UCL	15.1	99% Chebyshev(Mean, Sd) UCL	16.49

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.8	Mean	11.43
Maximum	12.5	Median	11.4
SD	0.505	Std. Error of Mean	0.168
Coefficient of Variation	0.0442	Skewness	1.082
Mean of logged Data	2.436	SD of logged Data	0.0434

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.75	95% Adjusted-CLT UCL (Chen-1995)	11.78
		95% Modified-t UCL (Johnson-1978)	11.76

Nonparametric Distribution Free UCLs

95% CLT UCL	11.71	95% Jackknife UCL	11.75
95% Standard Bootstrap UCL	11.7	95% Bootstrap-t UCL	11.83
95% Hall's Bootstrap UCL	11.97	95% Percentile Bootstrap UCL	11.71
95% BCA Bootstrap UCL	11.74		
90% Chebyshev(Mean, Sd) UCL	11.94	95% Chebyshev(Mean, Sd) UCL	12.17
97.5% Chebyshev(Mean, Sd) UCL	12.48	99% Chebyshev(Mean, Sd) UCL	13.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	42.3	Mean	45.98
Maximum	51.8	Median	44.9
SD	3.16	Std. Error of Mean	1.053
Coefficient of Variation	0.0687	Skewness	0.894
Mean of logged Data	3.826	SD of logged Data	0.0673

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.94	95% Adjusted-CLT UCL (Chen-1995)	48.05
		95% Modified-t UCL (Johnson-1978)	47.99

Nonparametric Distribution Free UCLs

95% CLT UCL	47.71	95% Jackknife UCL	47.94
95% Standard Bootstrap UCL	47.59	95% Bootstrap-t UCL	48.84
95% Hall's Bootstrap UCL	49.48	95% Percentile Bootstrap UCL	47.7
95% BCA Bootstrap UCL	47.89		
90% Chebyshev(Mean, Sd) UCL	49.14	95% Chebyshev(Mean, Sd) UCL	50.57
97.5% Chebyshev(Mean, Sd) UCL	52.56	99% Chebyshev(Mean, Sd) UCL	56.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.77	Mean	0.939
Maximum	0.995	Median	0.97
SD	0.0742	Std. Error of Mean	0.0247
Coefficient of Variation	0.079	Skewness	-1.876
Mean of logged Data	-0.066	SD of logged Data	0.0842

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.985	95% Adjusted-CLT UCL (Chen-1995)	0.963
		95% Modified-t UCL (Johnson-1978)	0.982

Nonparametric Distribution Free UCLs

95% CLT UCL	0.98	95% Jackknife UCL	0.985
95% Standard Bootstrap UCL	0.976	95% Bootstrap-t UCL	0.974
95% Hall's Bootstrap UCL	0.967	95% Percentile Bootstrap UCL	0.974
95% BCA Bootstrap UCL	0.968		
90% Chebyshev(Mean, Sd) UCL	1.013	95% Chebyshev(Mean, Sd) UCL	1.047
97.5% Chebyshev(Mean, Sd) UCL	1.093	99% Chebyshev(Mean, Sd) UCL	1.185

Suggested UCL to Use

95% Student's-t UCL	0.985	or 95% Modified-t UCL	0.982

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.505	Mean	0.521
Maximum	0.53	Median	0.52
SD	0.00726	Std. Error of Mean	0.00242
Coefficient of Variation	0.014	Skewness	-1.186
Mean of logged Data	-0.653	SD of logged Data	0.014

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.525	95% Adjusted-CLT UCL (Chen-1995)	0.524
		95% Modified-t UCL (Johnson-1978)	0.525

Nonparametric Distribution Free UCLs

95% CLT UCL	0.525	95% Jackknife UCL	0.525
95% Standard Bootstrap UCL	0.524	95% Bootstrap-t UCL	0.524
95% Hall's Bootstrap UCL	0.524	95% Percentile Bootstrap UCL	0.524
95% BCA Bootstrap UCL	0.523		
90% Chebyshev(Mean, Sd) UCL	0.528	95% Chebyshev(Mean, Sd) UCL	0.531
97.5% Chebyshev(Mean, Sd) UCL	0.536	99% Chebyshev(Mean, Sd) UCL	0.545

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	2.111
Maximum	2.155	Median	2.115
SD	0.0325	Std. Error of Mean	0.0108
Coefficient of Variation	0.0154	Skewness	-0.993
Mean of logged Data	0.747	SD of logged Data	0.0155

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.131	95% Adjusted-CLT UCL (Chen-1995)	2.125
		95% Modified-t UCL (Johnson-1978)	2.131

Nonparametric Distribution Free UCLs

95% CLT UCL	2.129	95% Jackknife UCL	2.131
95% Standard Bootstrap UCL	2.128	95% Bootstrap-t UCL	2.128
95% Hall's Bootstrap UCL	2.126	95% Percentile Bootstrap UCL	2.126
95% BCA Bootstrap UCL	2.124		
90% Chebyshev(Mean, Sd) UCL	2.144	95% Chebyshev(Mean, Sd) UCL	2.158
97.5% Chebyshev(Mean, Sd) UCL	2.179	99% Chebyshev(Mean, Sd) UCL	2.219

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	2.155
Maximum	2.51	Median	2.125
SD	0.137	Std. Error of Mean	0.0457
Coefficient of Variation	0.0636	Skewness	2.669
Mean of logged Data	0.766	SD of logged Data	0.0598

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.24	95% Adjusted-CLT UCL (Chen-1995)	2.274
		95% Modified-t UCL (Johnson-1978)	2.247

Nonparametric Distribution Free UCLs

95% CLT UCL	2.23	95% Jackknife UCL	2.24
95% Standard Bootstrap UCL	2.227	95% Bootstrap-t UCL	2.407
95% Hall's Bootstrap UCL	2.606	95% Percentile Bootstrap UCL	2.243
95% BCA Bootstrap UCL	2.273		
90% Chebyshev(Mean, Sd) UCL	2.292	95% Chebyshev(Mean, Sd) UCL	2.354
97.5% Chebyshev(Mean, Sd) UCL	2.44	99% Chebyshev(Mean, Sd) UCL	2.609

Suggested UCL to Use

95% Student's-t UCL	2.24	or 95% Modified-t UCL	2.247

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.63	Mean	2.127
Maximum	3.23	Median	2.045
SD	0.512	Std. Error of Mean	0.171
Coefficient of Variation	0.241	Skewness	1.436
Mean of logged Data	0.732	SD of logged Data	0.22

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.444	95% Adjusted-CLT UCL (Chen-1995)	2.495
		95% Modified-t UCL (Johnson-1978)	2.458

Nonparametric Distribution Free UCLs

95% CLT UCL	2.408	95% Jackknife UCL	2.444
95% Standard Bootstrap UCL	2.39	95% Bootstrap-t UCL	2.698
95% Hall's Bootstrap UCL	4.139	95% Percentile Bootstrap UCL	2.404
95% BCA Bootstrap UCL	2.448		
90% Chebyshev(Mean, Sd) UCL	2.639	95% Chebyshev(Mean, Sd) UCL	2.871
97.5% Chebyshev(Mean, Sd) UCL	3.193	99% Chebyshev(Mean, Sd) UCL	3.825

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.35	Mean	3.388
Maximum	4.67	Median	3.285
SD	0.615	Std. Error of Mean	0.205
Coefficient of Variation	0.181	Skewness	0.729
Mean of logged Data	1.206	SD of logged Data	0.18

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.769	95% Adjusted-CLT UCL (Chen-1995)	3.778
		95% Modified-t UCL (Johnson-1978)	3.778

Nonparametric Distribution Free UCLs

95% CLT UCL	3.725	95% Jackknife UCL	3.769
95% Standard Bootstrap UCL	3.709	95% Bootstrap-t UCL	3.891
95% Hall's Bootstrap UCL	5.023	95% Percentile Bootstrap UCL	3.726
95% BCA Bootstrap UCL	3.747		
90% Chebyshev(Mean, Sd) UCL	4.003	95% Chebyshev(Mean, Sd) UCL	4.281
97.5% Chebyshev(Mean, Sd) UCL	4.668	99% Chebyshev(Mean, Sd) UCL	5.427

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.17	Mean	3.128
Maximum	3.315	Median	3.245
SD	0.362	Std. Error of Mean	0.121
Coefficient of Variation	0.116	Skewness	-2.899
Mean of logged Data	1.133	SD of logged Data	0.135

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.352	95% Adjusted-CLT UCL (Chen-1995)	3.202
		95% Modified-t UCL (Johnson-1978)	3.333

Nonparametric Distribution Free UCLs

95% CLT UCL	3.326	95% Jackknife UCL	3.352
95% Standard Bootstrap UCL	3.317	95% Bootstrap-t UCL	3.287
95% Hall's Bootstrap UCL	3.249	95% Percentile Bootstrap UCL	3.264
95% BCA Bootstrap UCL	3.255		
90% Chebyshev(Mean, Sd) UCL	3.49	95% Chebyshev(Mean, Sd) UCL	3.654
97.5% Chebyshev(Mean, Sd) UCL	3.882	99% Chebyshev(Mean, Sd) UCL	4.33

Suggested UCL to Use

95% Student's-t UCL	3.352	or 95% Modified-t UCL	3.333

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	2.111
Maximum	2.155	Median	2.115
SD	0.0325	Std. Error of Mean	0.0108
Coefficient of Variation	0.0154	Skewness	-0.993
Mean of logged Data	0.747	SD of logged Data	0.0155

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.131	95% Adjusted-CLT UCL (Chen-1995)	2.125
		95% Modified-t UCL (Johnson-1978)	2.131

Nonparametric Distribution Free UCLs

95% CLT UCL	2.129	95% Jackknife UCL	2.131
95% Standard Bootstrap UCL	2.127	95% Bootstrap-t UCL	2.127
95% Hall's Bootstrap UCL	2.126	95% Percentile Bootstrap UCL	2.127
95% BCA Bootstrap UCL	2.125		
90% Chebyshev(Mean, Sd) UCL	2.144	95% Chebyshev(Mean, Sd) UCL	2.158
97.5% Chebyshev(Mean, Sd) UCL	2.179	99% Chebyshev(Mean, Sd) UCL	2.219

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	2.465
Maximum	3.91	Median	2.135
SD	0.626	Std. Error of Mean	0.209
Coefficient of Variation	0.254	Skewness	1.875
Mean of logged Data	0.878	SD of logged Data	0.222

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.853	95% Adjusted-CLT UCL (Chen-1995)	2.948
		95% Modified-t UCL (Johnson-1978)	2.875

Nonparametric Distribution Free UCLs

95% CLT UCL	2.808	95% Jackknife UCL	2.853
95% Standard Bootstrap UCL	2.786	95% Bootstrap-t UCL	3.455
95% Hall's Bootstrap UCL	3.746	95% Percentile Bootstrap UCL	2.81
95% BCA Bootstrap UCL	2.924		
90% Chebyshev(Mean, Sd) UCL	3.091	95% Chebyshev(Mean, Sd) UCL	3.375

97.5% Chebyshev(Mean, Sd) UCL	3.769	99% Chebyshev(Mean, Sd) UCL	4.543

Suggested UCL to Use

95% Student's-t UCL	2.853	or 95% Modified-t UCL	2.875

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	3.248
Maximum	3.315	Median	3.255
SD	0.0485	Std. Error of Mean	0.0162
Coefficient of Variation	0.0149	Skewness	-0.917
Mean of logged Data	1.178	SD of logged Data	0.015

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.278	95% Adjusted-CLT UCL (Chen-1995)	3.27
		95% Modified-t UCL (Johnson-1978)	3.278

Nonparametric Distribution Free UCLs

95% CLT UCL	3.275	95% Jackknife UCL	3.278
95% Standard Bootstrap UCL	3.273	95% Bootstrap-t UCL	3.273
95% Hall's Bootstrap UCL	3.271	95% Percentile Bootstrap UCL	3.272
95% BCA Bootstrap UCL	3.27		
90% Chebyshev(Mean, Sd) UCL	3.297	95% Chebyshev(Mean, Sd) UCL	3.319
97.5% Chebyshev(Mean, Sd) UCL	3.349	99% Chebyshev(Mean, Sd) UCL	3.409

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.045	Mean	3.138
Maximum	6.86	Median	2.32
SD	1.597	Std. Error of Mean	0.532

Coefficient of Variation	0.509	Skewness	1.88
Mean of logged Data	1.055	SD of logged Data	0.42

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.128	95% Adjusted-CLT UCL (Chen-1995)	4.37
		95% Modified-t UCL (Johnson-1978)	4.184

Nonparametric Distribution Free UCLs

95% CLT UCL	4.014	95% Jackknife UCL	4.128
95% Standard Bootstrap UCL	3.974	95% Bootstrap-t UCL	5.08
95% Hall's Bootstrap UCL	4.984	95% Percentile Bootstrap UCL	4.091
95% BCA Bootstrap UCL	4.315		
90% Chebyshev(Mean, Sd) UCL	4.735	95% Chebyshev(Mean, Sd) UCL	5.459
97.5% Chebyshev(Mean, Sd) UCL	6.462	99% Chebyshev(Mean, Sd) UCL	8.434

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.26	Mean	1.299
Maximum	1.325	Median	1.3
SD	0.0193	Std. Error of Mean	0.00644
Coefficient of Variation	0.0149	Skewness	-0.935
Mean of logged Data	0.261	SD of logged Data	0.015

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.311	95% Adjusted-CLT UCL (Chen-1995)	1.307
		95% Modified-t UCL (Johnson-1978)	1.311

Nonparametric Distribution Free UCLs

95% CLT UCL	1.309	95% Jackknife UCL	1.311
95% Standard Bootstrap UCL	1.309	95% Bootstrap-t UCL	1.309
95% Hall's Bootstrap UCL	1.308	95% Percentile Bootstrap UCL	1.308
95% BCA Bootstrap UCL	1.307		
90% Chebyshev(Mean, Sd) UCL	1.318	95% Chebyshev(Mean, Sd) UCL	1.327
97.5% Chebyshev(Mean, Sd) UCL	1.339	99% Chebyshev(Mean, Sd) UCL	1.363

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.22	Mean	3.068
Maximum	3.315	Median	3.245
SD	0.378	Std. Error of Mean	0.126
Coefficient of Variation	0.123	Skewness	-1.885
Mean of logged Data	1.113	SD of logged Data	0.137

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.303	95% Adjusted-CLT UCL (Chen-1995)	3.191
		95% Modified-t UCL (Johnson-1978)	3.289

Nonparametric Distribution Free UCLs

95% CLT UCL	3.276	95% Jackknife UCL	3.303
95% Standard Bootstrap UCL	3.266	95% Bootstrap-t UCL	3.239
95% Hall's Bootstrap UCL	3.208	95% Percentile Bootstrap UCL	3.251
95% BCA Bootstrap UCL	3.206		
90% Chebyshev(Mean, Sd) UCL	3.446	95% Chebyshev(Mean, Sd) UCL	3.617
97.5% Chebyshev(Mean, Sd) UCL	3.855	99% Chebyshev(Mean, Sd) UCL	4.322

Suggested UCL to Use

95% Student's-t UCL	3.303	or 95% Modified-t UCL	3.289

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.945	Mean	1.411

Maximum	1.99	Median	1.57
SD	0.379	Std. Error of Mean	0.126
Coefficient of Variation	0.269	Skewness	-0.0508
Mean of logged Data	0.31	SD of logged Data	0.281

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.646	95% Adjusted-CLT UCL (Chen-1995)	1.616
		95% Modified-t UCL (Johnson-1978)	1.645

Nonparametric Distribution Free UCLs

95% CLT UCL	1.619	95% Jackknife UCL	1.646
95% Standard Bootstrap UCL	1.601	95% Bootstrap-t UCL	1.641
95% Hall's Bootstrap UCL	1.595	95% Percentile Bootstrap UCL	1.614
95% BCA Bootstrap UCL	1.6		
90% Chebyshev(Mean, Sd) UCL	1.79	95% Chebyshev(Mean, Sd) UCL	1.962
97.5% Chebyshev(Mean, Sd) UCL	2.2	99% Chebyshev(Mean, Sd) UCL	2.669

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.22	Mean	3.188
Maximum	3.53	Median	3.245
SD	0.386	Std. Error of Mean	0.129
Coefficient of Variation	0.121	Skewness	-2.326
Mean of logged Data	1.152	SD of logged Data	0.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.427	95% Adjusted-CLT UCL (Chen-1995)	3.293
		95% Modified-t UCL (Johnson-1978)	3.41

Nonparametric Distribution Free UCLs

95% CLT UCL	3.399	95% Jackknife UCL	3.427

95% Standard Bootstrap UCL	3.384	95% Bootstrap-t UCL	3.345
95% Hall's Bootstrap UCL	3.328	95% Percentile Bootstrap UCL	3.355
95% BCA Bootstrap UCL	3.331		
90% Chebyshev(Mean, Sd) UCL	3.573	95% Chebyshev(Mean, Sd) UCL	3.748
97.5% Chebyshev(Mean, Sd) UCL	3.99	99% Chebyshev(Mean, Sd) UCL	4.467

Suggested UCL to Use

95% Student's-t UCL	3.427	or 95% Modified-t UCL	3.41

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	3.521
Maximum	6.04	Median	3.285
SD	1.04	Std. Error of Mean	0.347
Coefficient of Variation	0.295	Skewness	1.896
Mean of logged Data	1.225	SD of logged Data	0.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.165	95% Adjusted-CLT UCL (Chen-1995)	4.325
		95% Modified-t UCL (Johnson-1978)	4.202

Nonparametric Distribution Free UCLs

95% CLT UCL	4.091	95% Jackknife UCL	4.165
95% Standard Bootstrap UCL	4.065	95% Bootstrap-t UCL	4.644
95% Hall's Bootstrap UCL	7.144	95% Percentile Bootstrap UCL	4.119
95% BCA Bootstrap UCL	4.312		
90% Chebyshev(Mean, Sd) UCL	4.56	95% Chebyshev(Mean, Sd) UCL	5.031
97.5% Chebyshev(Mean, Sd) UCL	5.685	99% Chebyshev(Mean, Sd) UCL	6.969

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/22/2021 3:47:13 PM
From File	38002Q_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.3	Mean	10.54
Maximum	12.6	Median	10.4
SD	1.605	Std. Error of Mean	0.535
Coefficient of Variation	0.152	Skewness	-0.0816
Mean of logged Data	2.345	SD of logged Data	0.155

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.54	95% Adjusted-CLT UCL (Chen-1995)	11.41
		95% Modified-t UCL (Johnson-1978)	11.54

Nonparametric Distribution Free UCLs

95% CLT UCL	11.42	95% Jackknife UCL	11.54
95% Standard Bootstrap UCL	11.39	95% Bootstrap-t UCL	11.49
95% Hall's Bootstrap UCL	11.33	95% Percentile Bootstrap UCL	11.4
95% BCA Bootstrap UCL	11.36		
90% Chebyshev(Mean, Sd) UCL	12.15	95% Chebyshev(Mean, Sd) UCL	12.88
97.5% Chebyshev(Mean, Sd) UCL	13.89	99% Chebyshev(Mean, Sd) UCL	15.87

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	7.7	Mean	8.591
Maximum	9.27	Median	8.5
SD	0.527	Std. Error of Mean	0.176
Coefficient of Variation	0.0613	Skewness	-0.337

Mean of logged Data	2.149	SD of logged Data	0.062

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.918	95% Adjusted-CLT UCL (Chen-1995)	8.859
		95% Modified-t UCL (Johnson-1978)	8.914

Nonparametric Distribution Free UCLs

95% CLT UCL	8.88	95% Jackknife UCL	8.918
95% Standard Bootstrap UCL	8.864	95% Bootstrap-t UCL	8.92
95% Hall's Bootstrap UCL	8.856	95% Percentile Bootstrap UCL	8.852
95% BCA Bootstrap UCL	8.85		
90% Chebyshev(Mean, Sd) UCL	9.118	95% Chebyshev(Mean, Sd) UCL	9.356
97.5% Chebyshev(Mean, Sd) UCL	9.688	99% Chebyshev(Mean, Sd) UCL	10.34

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	32.6	Mean	38.38
Maximum	43.4	Median	38.2
SD	3.803	Std. Error of Mean	1.268
Coefficient of Variation	0.0991	Skewness	-0.0193
Mean of logged Data	3.643	SD of logged Data	0.0997

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.74	95% Adjusted-CLT UCL (Chen-1995)	40.45
		95% Modified-t UCL (Johnson-1978)	40.73

Nonparametric Distribution Free UCLs

95% CLT UCL	40.46	95% Jackknife UCL	40.74
95% Standard Bootstrap UCL	40.34	95% Bootstrap-t UCL	40.6
95% Hall's Bootstrap UCL	40.07	95% Percentile Bootstrap UCL	40.43
95% BCA Bootstrap UCL	40.31		

90% Chebyshev(Mean, Sd) UCL	42.18	95% Chebyshev(Mean, Sd) UCL	43.9
97.5% Chebyshev(Mean, Sd) UCL	46.29	99% Chebyshev(Mean, Sd) UCL	50.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.925	Mean	1.015
Maximum	1.25	Median	0.98
SD	0.0998	Std. Error of Mean	0.0333
Coefficient of Variation	0.0983	Skewness	2.021
Mean of logged Data	0.011	SD of logged Data	0.0919

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.077	95% Adjusted-CLT UCL (Chen-1995)	1.094
		95% Modified-t UCL (Johnson-1978)	1.081

Nonparametric Distribution Free UCLs

95% CLT UCL	1.07	95% Jackknife UCL	1.077
95% Standard Bootstrap UCL	1.068	95% Bootstrap-t UCL	1.242
95% Hall's Bootstrap UCL	1.522	95% Percentile Bootstrap UCL	1.073
95% BCA Bootstrap UCL	1.092		
90% Chebyshev(Mean, Sd) UCL	1.115	95% Chebyshev(Mean, Sd) UCL	1.16
97.5% Chebyshev(Mean, Sd) UCL	1.223	99% Chebyshev(Mean, Sd) UCL	1.346

Suggested UCL to Use

95% Student's-t UCL	1.077	or 95% Modified-t UCL	1.081

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.494	Mean	0.519
Maximum	0.53	Median	0.52

SD	0.0106	Std. Error of Mean	0.00353
Coefficient of Variation	0.0204	Skewness	-2.084
Mean of logged Data	-0.656	SD of logged Data	0.0207

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.526	95% Adjusted-CLT UCL (Chen-1995)	0.522
		95% Modified-t UCL (Johnson-1978)	0.525

Nonparametric Distribution Free UCLs

95% CLT UCL	0.525	95% Jackknife UCL	0.526
95% Standard Bootstrap UCL	0.525	95% Bootstrap-t UCL	0.524
95% Hall's Bootstrap UCL	0.523	95% Percentile Bootstrap UCL	0.524
95% BCA Bootstrap UCL	0.523		
90% Chebyshev(Mean, Sd) UCL	0.53	95% Chebyshev(Mean, Sd) UCL	0.535
97.5% Chebyshev(Mean, Sd) UCL	0.541	99% Chebyshev(Mean, Sd) UCL	0.554

Suggested UCL to Use

95% Student's-t UCL	0.526	or 95% Modified-t UCL	0.525

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.005	Mean	2.107
Maximum	2.145	Median	2.12
SD	0.0419	Std. Error of Mean	0.014
Coefficient of Variation	0.0199	Skewness	-2.115
Mean of logged Data	0.745	SD of logged Data	0.0202

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.133	95% Adjusted-CLT UCL (Chen-1995)	2.12
		95% Modified-t UCL (Johnson-1978)	2.132

Nonparametric Distribution Free UCLs

95% CLT UCL	2.13	95% Jackknife UCL	2.133
95% Standard Bootstrap UCL	2.129	95% Bootstrap-t UCL	2.126

95% Hall's Bootstrap UCL	2.123	95% Percentile Bootstrap UCL	2.126
95% BCA Bootstrap UCL	2.123		
90% Chebyshev(Mean, Sd) UCL	2.149	95% Chebyshev(Mean, Sd) UCL	2.168
97.5% Chebyshev(Mean, Sd) UCL	2.194	99% Chebyshev(Mean, Sd) UCL	2.246

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	2.552
Maximum	4.7	Median	2.13
SD	0.898	Std. Error of Mean	0.299
Coefficient of Variation	0.352	Skewness	2.163
Mean of logged Data	0.895	SD of logged Data	0.287

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.109	95% Adjusted-CLT UCL (Chen-1995)	3.275
		95% Modified-t UCL (Johnson-1978)	3.145

Nonparametric Distribution Free UCLs

95% CLT UCL	3.045	95% Jackknife UCL	3.109
95% Standard Bootstrap UCL	3.003	95% Bootstrap-t UCL	6.116
95% Hall's Bootstrap UCL	5.979	95% Percentile Bootstrap UCL	3.01
95% BCA Bootstrap UCL	3.255		
90% Chebyshev(Mean, Sd) UCL	3.45	95% Chebyshev(Mean, Sd) UCL	3.857
97.5% Chebyshev(Mean, Sd) UCL	4.421	99% Chebyshev(Mean, Sd) UCL	5.53

Suggested UCL to Use

95% Student's-t UCL	3.109	or 95% Modified-t UCL	3.145

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.005	Mean	2.703
Maximum	5.21	Median	2.13
SD	1.082	Std. Error of Mean	0.361
Coefficient of Variation	0.4	Skewness	1.925
Mean of logged Data	0.939	SD of logged Data	0.332

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.374	95% Adjusted-CLT UCL (Chen-1995)	3.544
		95% Modified-t UCL (Johnson-1978)	3.412

Nonparametric Distribution Free UCLs

95% CLT UCL	3.296	95% Jackknife UCL	3.374
95% Standard Bootstrap UCL	3.251	95% Bootstrap-t UCL	4.708
95% Hall's Bootstrap UCL	5.311	95% Percentile Bootstrap UCL	3.277
95% BCA Bootstrap UCL	3.482		
90% Chebyshev(Mean, Sd) UCL	3.785	95% Chebyshev(Mean, Sd) UCL	4.275
97.5% Chebyshev(Mean, Sd) UCL	4.955	99% Chebyshev(Mean, Sd) UCL	6.291

Suggested UCL to Use

95% Student's-t UCL	3.374	or 95% Modified-t UCL	3.412

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	4.457
Maximum	8.85	Median	3.28
SD	2.052	Std. Error of Mean	0.684
Coefficient of Variation	0.461	Skewness	1.564
Mean of logged Data	1.418	SD of logged Data	0.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.729	95% Adjusted-CLT UCL (Chen-1995)	5.963
		95% Modified-t UCL (Johnson-1978)	5.788

Nonparametric Distribution Free UCLs

95% CLT UCL	5.582	95% Jackknife UCL	5.729
95% Standard Bootstrap UCL	5.507	95% Bootstrap-t UCL	7.438
95% Hall's Bootstrap UCL	5.884	95% Percentile Bootstrap UCL	5.567

95% BCA Bootstrap UCL	5.862		
90% Chebyshev(Mean, Sd) UCL	6.509	95% Chebyshev(Mean, Sd) UCL	7.439
97.5% Chebyshev(Mean, Sd) UCL	8.729	99% Chebyshev(Mean, Sd) UCL	11.26

Suggested UCL to Use

95% Student's-t UCL	5.729	or 95% Modified-t UCL	5.788

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	3.689
Maximum	5.31	Median	3.28
SD	0.784	Std. Error of Mean	0.261
Coefficient of Variation	0.213	Skewness	1.528
Mean of logged Data	1.288	SD of logged Data	0.193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.175	95% Adjusted-CLT UCL (Chen-1995)	4.261
		95% Modified-t UCL (Johnson-1978)	4.197

Nonparametric Distribution Free UCLs

95% CLT UCL	4.119	95% Jackknife UCL	4.175
95% Standard Bootstrap UCL	4.103	95% Bootstrap-t UCL	5.1
95% Hall's Bootstrap UCL	4.777	95% Percentile Bootstrap UCL	4.132
95% BCA Bootstrap UCL	4.224		
90% Chebyshev(Mean, Sd) UCL	4.473	95% Chebyshev(Mean, Sd) UCL	4.828
97.5% Chebyshev(Mean, Sd) UCL	5.321	99% Chebyshev(Mean, Sd) UCL	6.289

Suggested UCL to Use

95% Student's-t UCL	4.175	or 95% Modified-t UCL	4.197

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.005	Mean	2.217
Maximum	3.07	Median	2.13
SD	0.323	Std. Error of Mean	0.108
Coefficient of Variation	0.146	Skewness	2.89

Mean of logged Data	0.788	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.417	95% Adjusted-CLT UCL (Chen-1995)	2.505
		95% Modified-t UCL (Johnson-1978)	2.434

Nonparametric Distribution Free UCLs

95% CLT UCL	2.394	95% Jackknife UCL	2.417
95% Standard Bootstrap UCL	2.388	95% Bootstrap-t UCL	3.827
95% Hall's Bootstrap UCL	3.624	95% Percentile Bootstrap UCL	2.43
95% BCA Bootstrap UCL	2.53		
90% Chebyshev(Mean, Sd) UCL	2.54	95% Chebyshev(Mean, Sd) UCL	2.686
97.5% Chebyshev(Mean, Sd) UCL	2.889	99% Chebyshev(Mean, Sd) UCL	3.288

Suggested UCL to Use

95% Student's-t UCL	2.417	or 95% Modified-t UCL	2.434

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	3.282
Maximum	6.83	Median	2.135
SD	1.795	Std. Error of Mean	0.598
Coefficient of Variation	0.547	Skewness	1.253
Mean of logged Data	1.076	SD of logged Data	0.481

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.395	95% Adjusted-CLT UCL (Chen-1995)	4.534
		95% Modified-t UCL (Johnson-1978)	4.437

Nonparametric Distribution Free UCLs

95% CLT UCL	4.267	95% Jackknife UCL	4.395
95% Standard Bootstrap UCL	4.198	95% Bootstrap-t UCL	5.147
95% Hall's Bootstrap UCL	4.03	95% Percentile Bootstrap UCL	4.257
95% BCA Bootstrap UCL	4.398		
90% Chebyshev(Mean, Sd) UCL	5.077	95% Chebyshev(Mean, Sd) UCL	5.891
97.5% Chebyshev(Mean, Sd) UCL	7.019	99% Chebyshev(Mean, Sd) UCL	9.236

Suggested UCL to Use

95% Student's-t UCL	4.395	or 95% Modified-t UCL	4.437

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.085	Mean	3.243
Maximum	3.3	Median	3.26
SD	0.0647	Std. Error of Mean	0.0216
Coefficient of Variation	0.0199	Skewness	-2.118
Mean of logged Data	1.176	SD of logged Data	0.0203

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.283	95% Adjusted-CLT UCL (Chen-1995)	3.262
		95% Modified-t UCL (Johnson-1978)	3.28

Nonparametric Distribution Free UCLs

95% CLT UCL	3.278	95% Jackknife UCL	3.283
95% Standard Bootstrap UCL	3.277	95% Bootstrap-t UCL	3.269
95% Hall's Bootstrap UCL	3.267	95% Percentile Bootstrap UCL	3.272
95% BCA Bootstrap UCL	3.267		
90% Chebyshev(Mean, Sd) UCL	3.307	95% Chebyshev(Mean, Sd) UCL	3.337
97.5% Chebyshev(Mean, Sd) UCL	3.377	99% Chebyshev(Mean, Sd) UCL	3.457

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	3.127
Maximum	7.86	Median	2.12
SD	2.118	Std. Error of Mean	0.706
Coefficient of Variation	0.677	Skewness	1.918
Mean of logged Data	0.997	SD of logged Data	0.515

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.439	95% Adjusted-CLT UCL (Chen-1995)	4.77
		95% Modified-t UCL (Johnson-1978)	4.515

Nonparametric Distribution Free UCLs

95% CLT UCL	4.288	95% Jackknife UCL	4.439
95% Standard Bootstrap UCL	4.211	95% Bootstrap-t UCL	58.77
95% Hall's Bootstrap UCL	60.35	95% Percentile Bootstrap UCL	4.407
95% BCA Bootstrap UCL	4.657		
90% Chebyshev(Mean, Sd) UCL	5.245	95% Chebyshev(Mean, Sd) UCL	6.204
97.5% Chebyshev(Mean, Sd) UCL	7.535	99% Chebyshev(Mean, Sd) UCL	10.15

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.204

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.235	Mean	1.298
Maximum	1.32	Median	1.305
SD	0.0258	Std. Error of Mean	0.00858
Coefficient of Variation	0.0198	Skewness	-2.113
Mean of logged Data	0.26	SD of logged Data	0.0202

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.314	95% Adjusted-CLT UCL (Chen-1995)	1.305
		95% Modified-t UCL (Johnson-1978)	1.313

Nonparametric Distribution Free UCLs

95% CLT UCL	1.312	95% Jackknife UCL	1.314
95% Standard Bootstrap UCL	1.311	95% Bootstrap-t UCL	1.309
95% Hall's Bootstrap UCL	1.307	95% Percentile Bootstrap UCL	1.309
95% BCA Bootstrap UCL	1.308		
90% Chebyshev(Mean, Sd) UCL	1.324	95% Chebyshev(Mean, Sd) UCL	1.335
97.5% Chebyshev(Mean, Sd) UCL	1.351	99% Chebyshev(Mean, Sd) UCL	1.383

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.02	Mean	3.348
Maximum	4.46	Median	3.26
SD	0.428	Std. Error of Mean	0.143
Coefficient of Variation	0.128	Skewness	2.71
Mean of logged Data	1.202	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.613	95% Adjusted-CLT UCL (Chen-1995)	3.72
		95% Modified-t UCL (Johnson-1978)	3.634

Nonparametric Distribution Free UCLs

95% CLT UCL	3.582	95% Jackknife UCL	3.613
95% Standard Bootstrap UCL	3.569	95% Bootstrap-t UCL	4.113
95% Hall's Bootstrap UCL	4.877	95% Percentile Bootstrap UCL	3.608
95% BCA Bootstrap UCL	3.662		
90% Chebyshev(Mean, Sd) UCL	3.775	95% Chebyshev(Mean, Sd) UCL	3.969
97.5% Chebyshev(Mean, Sd) UCL	4.238	99% Chebyshev(Mean, Sd) UCL	4.766

Suggested UCL to Use

95% Student's-t UCL	3.613	or 95% Modified-t UCL	3.634

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.925	Mean	1.439
Maximum	3.1	Median	0.98
SD	0.846	Std. Error of Mean	0.282
Coefficient of Variation	0.588	Skewness	1.593
Mean of logged Data	0.246	SD of logged Data	0.477

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.963	95% Adjusted-CLT UCL (Chen-1995)	2.063
		95% Modified-t UCL (Johnson-1978)	1.988

Nonparametric Distribution Free UCLs

95% CLT UCL	1.903	95% Jackknife UCL	1.963
95% Standard Bootstrap UCL	1.882	95% Bootstrap-t UCL	4.315
95% Hall's Bootstrap UCL	5.87	95% Percentile Bootstrap UCL	1.912
95% BCA Bootstrap UCL	2.061		
90% Chebyshev(Mean, Sd) UCL	2.285	95% Chebyshev(Mean, Sd) UCL	2.668
97.5% Chebyshev(Mean, Sd) UCL	3.2	99% Chebyshev(Mean, Sd) UCL	4.245

Suggested UCL to Use

95% Student's-t UCL	1.963	or 95% Modified-t UCL	1.988

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.28	Mean	3.279
Maximum	4.61	Median	3.235
SD	0.651	Std. Error of Mean	0.217
Coefficient of Variation	0.198	Skewness	0.777
Mean of logged Data	1.17	SD of logged Data	0.195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.682	95% Adjusted-CLT UCL (Chen-1995)	3.696
		95% Modified-t UCL (Johnson-1978)	3.691

Nonparametric Distribution Free UCLs

95% CLT UCL	3.636	95% Jackknife UCL	3.682
95% Standard Bootstrap UCL	3.617	95% Bootstrap-t UCL	3.79
95% Hall's Bootstrap UCL	4.42	95% Percentile Bootstrap UCL	3.639
95% BCA Bootstrap UCL	3.661		
90% Chebyshev(Mean, Sd) UCL	3.929	95% Chebyshev(Mean, Sd) UCL	4.224
97.5% Chebyshev(Mean, Sd) UCL	4.633	99% Chebyshev(Mean, Sd) UCL	5.436

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	4.439
Maximum	8.82	Median	3.28
SD	2.047	Std. Error of Mean	0.682
Coefficient of Variation	0.461	Skewness	1.596
Mean of logged Data	1.415	SD of logged Data	0.39

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.708	95% Adjusted-CLT UCL (Chen-1995)	5.949
		95% Modified-t UCL (Johnson-1978)	5.768

Nonparametric Distribution Free UCLs

95% CLT UCL	5.561	95% Jackknife UCL	5.708
95% Standard Bootstrap UCL	5.473	95% Bootstrap-t UCL	7.793
95% Hall's Bootstrap UCL	6.442	95% Percentile Bootstrap UCL	5.633
95% BCA Bootstrap UCL	5.879		
90% Chebyshev(Mean, Sd) UCL	6.486	95% Chebyshev(Mean, Sd) UCL	7.413
97.5% Chebyshev(Mean, Sd) UCL	8.699	99% Chebyshev(Mean, Sd) UCL	11.23

Suggested UCL to Use

95% Student's-t UCL	5.708	or 95% Modified-t UCL	5.768

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:31:34 AM
From File	40005A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	10.2	Mean	10.9
Maximum	11.5	Median	11
SD	0.492	Std. Error of Mean	0.164
Coefficient of Variation	0.0452	Skewness	-0.17
Mean of logged Data	2.388	SD of logged Data	0.0454

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.21	95% Adjusted-CLT UCL (Chen-1995)	11.16
		95% Modified-t UCL (Johnson-1978)	11.2

Nonparametric Distribution Free UCLs

95% CLT UCL	11.17	95% Jackknife UCL	11.21
95% Standard Bootstrap UCL	11.15	95% Bootstrap-t UCL	11.18
95% Hall's Bootstrap UCL	11.12	95% Percentile Bootstrap UCL	11.16
95% BCA Bootstrap UCL	11.14		
90% Chebyshev(Mean, Sd) UCL	11.39	95% Chebyshev(Mean, Sd) UCL	11.62
97.5% Chebyshev(Mean, Sd) UCL	11.93	99% Chebyshev(Mean, Sd) UCL	12.53

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.37	Mean	12.76
Maximum	38.2	Median	9.24
SD	9.615	Std. Error of Mean	3.205
Coefficient of Variation	0.754	Skewness	2.913

Mean of logged Data	2.407	SD of logged Data	0.479

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.72	95% Adjusted-CLT UCL (Chen-1995)	21.36
		95% Modified-t UCL (Johnson-1978)	19.24

Nonparametric Distribution Free UCLs

95% CLT UCL	18.03	95% Jackknife UCL	18.72
95% Standard Bootstrap UCL	17.84	95% Bootstrap-t UCL	53.11
95% Hall's Bootstrap UCL	40.49	95% Percentile Bootstrap UCL	18.98
95% BCA Bootstrap UCL	21.91		
90% Chebyshev(Mean, Sd) UCL	22.37	95% Chebyshev(Mean, Sd) UCL	26.73
97.5% Chebyshev(Mean, Sd) UCL	32.77	99% Chebyshev(Mean, Sd) UCL	44.65

Suggested UCL to Use

95% Student's-t UCL	18.72	or 95% Modified-t UCL	19.24

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	37.8	Mean	41.09
Maximum	44.4	Median	41.1
SD	1.913	Std. Error of Mean	0.638
Coefficient of Variation	0.0466	Skewness	-0.00242
Mean of logged Data	3.715	SD of logged Data	0.0467

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.27	95% Adjusted-CLT UCL (Chen-1995)	42.14
		95% Modified-t UCL (Johnson-1978)	42.27

Nonparametric Distribution Free UCLs

95% CLT UCL	42.14	95% Jackknife UCL	42.27
95% Standard Bootstrap UCL	42.07	95% Bootstrap-t UCL	42.28
95% Hall's Bootstrap UCL	42.35	95% Percentile Bootstrap UCL	42.07
95% BCA Bootstrap UCL	42.08		
90% Chebyshev(Mean, Sd) UCL	43	95% Chebyshev(Mean, Sd) UCL	43.87
97.5% Chebyshev(Mean, Sd) UCL	45.07	99% Chebyshev(Mean, Sd) UCL	47.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.885	Mean	1.466
Maximum	1.98	Median	1.83
SD	0.5	Std. Error of Mean	0.167
Coefficient of Variation	0.341	Skewness	-0.25
Mean of logged Data	0.325	SD of logged Data	0.368

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.776	95% Adjusted-CLT UCL (Chen-1995)	1.726
		95% Modified-t UCL (Johnson-1978)	1.774

Nonparametric Distribution Free UCLs

95% CLT UCL	1.741	95% Jackknife UCL	1.776
95% Standard Bootstrap UCL	1.729	95% Bootstrap-t UCL	1.721
95% Hall's Bootstrap UCL	1.666	95% Percentile Bootstrap UCL	1.702
95% BCA Bootstrap UCL	1.695		
90% Chebyshev(Mean, Sd) UCL	1.967	95% Chebyshev(Mean, Sd) UCL	2.193
97.5% Chebyshev(Mean, Sd) UCL	2.508	99% Chebyshev(Mean, Sd) UCL	3.126

Suggested UCL to Use

95% Student's-t UCL	1.776	or 95% Modified-t UCL	1.774

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.471	Mean	0.503
Maximum	0.525	Median	0.505

SD	0.0172	Std. Error of Mean	0.00574
Coefficient of Variation	0.0342	Skewness	-0.526
Mean of logged Data	-0.689	SD of logged Data	0.0345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.513	95% Adjusted-CLT UCL (Chen-1995)	0.511
		95% Modified-t UCL (Johnson-1978)	0.513

Nonparametric Distribution Free UCLs

95% CLT UCL	0.512	95% Jackknife UCL	0.513
95% Standard Bootstrap UCL	0.511	95% Bootstrap-t UCL	0.512
95% Hall's Bootstrap UCL	0.511	95% Percentile Bootstrap UCL	0.511
95% BCA Bootstrap UCL	0.511		
90% Chebyshev(Mean, Sd) UCL	0.52	95% Chebyshev(Mean, Sd) UCL	0.528
97.5% Chebyshev(Mean, Sd) UCL	0.538	99% Chebyshev(Mean, Sd) UCL	0.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.915	Mean	2.042
Maximum	2.14	Median	2.045
SD	0.0701	Std. Error of Mean	0.0234
Coefficient of Variation	0.0343	Skewness	-0.452
Mean of logged Data	0.713	SD of logged Data	0.0346

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.085	95% Adjusted-CLT UCL (Chen-1995)	2.076
		95% Modified-t UCL (Johnson-1978)	2.085

Nonparametric Distribution Free UCLs

95% CLT UCL	2.08	95% Jackknife UCL	2.085
95% Standard Bootstrap UCL	2.078	95% Bootstrap-t UCL	2.08

95% Hall's Bootstrap UCL	2.079	95% Percentile Bootstrap UCL	2.076
95% BCA Bootstrap UCL	2.074		
90% Chebyshev(Mean, Sd) UCL	2.112	95% Chebyshev(Mean, Sd) UCL	2.144
97.5% Chebyshev(Mean, Sd) UCL	2.188	99% Chebyshev(Mean, Sd) UCL	2.274

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.92	Mean	2.175
Maximum	2.73	Median	2.08
SD	0.29	Std. Error of Mean	0.0966
Coefficient of Variation	0.133	Skewness	1.447
Mean of logged Data	0.77	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.355	95% Adjusted-CLT UCL (Chen-1995)	2.384
		95% Modified-t UCL (Johnson-1978)	2.362

Nonparametric Distribution Free UCLs

95% CLT UCL	2.334	95% Jackknife UCL	2.355
95% Standard Bootstrap UCL	2.324	95% Bootstrap-t UCL	2.773
95% Hall's Bootstrap UCL	3.505	95% Percentile Bootstrap UCL	2.332
95% BCA Bootstrap UCL	2.384		
90% Chebyshev(Mean, Sd) UCL	2.465	95% Chebyshev(Mean, Sd) UCL	2.596
97.5% Chebyshev(Mean, Sd) UCL	2.778	99% Chebyshev(Mean, Sd) UCL	3.136

Suggested UCL to Use

95% Student's-t UCL	2.355	or 95% Modified-t UCL	2.362

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0

Minimum	1.985	Mean	2.336
Maximum	3.22	Median	2.095
SD	0.509	Std. Error of Mean	0.17
Coefficient of Variation	0.218	Skewness	1.501
Mean of logged Data	0.83	SD of logged Data	0.197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.651	95% Adjusted-CLT UCL (Chen-1995)	2.706
		95% Modified-t UCL (Johnson-1978)	2.665

Nonparametric Distribution Free UCLs

95% CLT UCL	2.615	95% Jackknife UCL	2.651
95% Standard Bootstrap UCL	2.606	95% Bootstrap-t UCL	3.83
95% Hall's Bootstrap UCL	4.28	95% Percentile Bootstrap UCL	2.602
95% BCA Bootstrap UCL	2.716		
90% Chebyshev(Mean, Sd) UCL	2.845	95% Chebyshev(Mean, Sd) UCL	3.075
97.5% Chebyshev(Mean, Sd) UCL	3.395	99% Chebyshev(Mean, Sd) UCL	4.023

Suggested UCL to Use

95% Student's-t UCL	2.651	or 95% Modified-t UCL	2.665

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	3.898
Maximum	5.88	Median	3.225
SD	1.16	Std. Error of Mean	0.387
Coefficient of Variation	0.298	Skewness	1.1
Mean of logged Data	1.325	SD of logged Data	0.272

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.617	95% Adjusted-CLT UCL (Chen-1995)	4.686
		95% Modified-t UCL (Johnson-1978)	4.641

Nonparametric Distribution Free UCLs

95% CLT UCL	4.534	95% Jackknife UCL	4.617
95% Standard Bootstrap UCL	4.492	95% Bootstrap-t UCL	5.198
95% Hall's Bootstrap UCL	4.505	95% Percentile Bootstrap UCL	4.528

95% BCA Bootstrap UCL	4.599		
90% Chebyshev(Mean, Sd) UCL	5.058	95% Chebyshev(Mean, Sd) UCL	5.583
97.5% Chebyshev(Mean, Sd) UCL	6.313	99% Chebyshev(Mean, Sd) UCL	7.745

Suggested UCL to Use

95% Student's-t UCL	4.617	or 95% Modified-t UCL	4.641

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.7	Mean	3.074
Maximum	3.295	Median	3.105
SD	0.185	Std. Error of Mean	0.0618
Coefficient of Variation	0.0603	Skewness	-1.116
Mean of logged Data	1.121	SD of logged Data	0.0621

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.189	95% Adjusted-CLT UCL (Chen-1995)	3.151
		95% Modified-t UCL (Johnson-1978)	3.185

Nonparametric Distribution Free UCLs

95% CLT UCL	3.176	95% Jackknife UCL	3.189
95% Standard Bootstrap UCL	3.172	95% Bootstrap-t UCL	3.168
95% Hall's Bootstrap UCL	3.151	95% Percentile Bootstrap UCL	3.165
95% BCA Bootstrap UCL	3.152		
90% Chebyshev(Mean, Sd) UCL	3.259	95% Chebyshev(Mean, Sd) UCL	3.343
97.5% Chebyshev(Mean, Sd) UCL	3.46	99% Chebyshev(Mean, Sd) UCL	3.689

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.89	Mean	2.039

Maximum	2.14	Median	2.045
SD	0.076	Std. Error of Mean	0.0253
Coefficient of Variation	0.0373	Skewness	-0.747
Mean of logged Data	0.712	SD of logged Data	0.0377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.086	95% Adjusted-CLT UCL (Chen-1995)	2.074
		95% Modified-t UCL (Johnson-1978)	2.085

Nonparametric Distribution Free UCLs

95% CLT UCL	2.081	95% Jackknife UCL	2.086
95% Standard Bootstrap UCL	2.078	95% Bootstrap-t UCL	2.079
95% Hall's Bootstrap UCL	2.075	95% Percentile Bootstrap UCL	2.075
95% BCA Bootstrap UCL	2.072		
90% Chebyshev(Mean, Sd) UCL	2.115	95% Chebyshev(Mean, Sd) UCL	2.149
97.5% Chebyshev(Mean, Sd) UCL	2.197	99% Chebyshev(Mean, Sd) UCL	2.291

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	2.767
Maximum	4.57	Median	2.095
SD	1.107	Std. Error of Mean	0.369
Coefficient of Variation	0.4	Skewness	1.055
Mean of logged Data	0.955	SD of logged Data	0.362

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.454	95% Adjusted-CLT UCL (Chen-1995)	3.513
		95% Modified-t UCL (Johnson-1978)	3.475

Nonparametric Distribution Free UCLs

95% CLT UCL	3.374	95% Jackknife UCL	3.454

95% Standard Bootstrap UCL	3.341	95% Bootstrap-t UCL	3.957
95% Hall's Bootstrap UCL	3.291	95% Percentile Bootstrap UCL	3.378
95% BCA Bootstrap UCL	3.421		
90% Chebyshev(Mean, Sd) UCL	3.875	95% Chebyshev(Mean, Sd) UCL	4.376
97.5% Chebyshev(Mean, Sd) UCL	5.072	99% Chebyshev(Mean, Sd) UCL	6.44

Suggested UCL to Use

95% Student's-t UCL	3.454	or 95% Modified-t UCL	3.475

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.945	Mean	3.142
Maximum	3.295	Median	3.15
SD	0.109	Std. Error of Mean	0.0363
Coefficient of Variation	0.0346	Skewness	-0.44
Mean of logged Data	1.144	SD of logged Data	0.0349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.209	95% Adjusted-CLT UCL (Chen-1995)	3.196
		95% Modified-t UCL (Johnson-1978)	3.208

Nonparametric Distribution Free UCLs

95% CLT UCL	3.201	95% Jackknife UCL	3.209
95% Standard Bootstrap UCL	3.198	95% Bootstrap-t UCL	3.204
95% Hall's Bootstrap UCL	3.198	95% Percentile Bootstrap UCL	3.199
95% BCA Bootstrap UCL	3.194		
90% Chebyshev(Mean, Sd) UCL	3.25	95% Chebyshev(Mean, Sd) UCL	3.3
97.5% Chebyshev(Mean, Sd) UCL	3.368	99% Chebyshev(Mean, Sd) UCL	3.503

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	1.985	Mean	3.393
Maximum	6.77	Median	2.095
SD	2.046	Std. Error of Mean	0.682
Coefficient of Variation	0.603	Skewness	0.98
Mean of logged Data	1.079	SD of logged Data	0.544

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.661	95% Adjusted-CLT UCL (Chen-1995)	4.753
		95% Modified-t UCL (Johnson-1978)	4.698

Nonparametric Distribution Free UCLs

95% CLT UCL	4.515	95% Jackknife UCL	4.661
95% Standard Bootstrap UCL	4.441	95% Bootstrap-t UCL	5.256
95% Hall's Bootstrap UCL	4.155	95% Percentile Bootstrap UCL	4.491
95% BCA Bootstrap UCL	4.729		
90% Chebyshev(Mean, Sd) UCL	5.439	95% Chebyshev(Mean, Sd) UCL	6.366
97.5% Chebyshev(Mean, Sd) UCL	7.652	99% Chebyshev(Mean, Sd) UCL	10.18

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.366

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.175	Mean	1.257
Maximum	1.32	Median	1.26
SD	0.0449	Std. Error of Mean	0.015
Coefficient of Variation	0.0357	Skewness	-0.45
Mean of logged Data	0.228	SD of logged Data	0.036

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.284	95% Adjusted-CLT UCL (Chen-1995)	1.279
		95% Modified-t UCL (Johnson-1978)	1.284

Nonparametric Distribution Free UCLs

95% CLT UCL	1.281	95% Jackknife UCL	1.284
95% Standard Bootstrap UCL	1.28	95% Bootstrap-t UCL	1.282

95% Hall's Bootstrap UCL	1.279	95% Percentile Bootstrap UCL	1.281
95% BCA Bootstrap UCL	1.277		
90% Chebyshev(Mean, Sd) UCL	1.302	95% Chebyshev(Mean, Sd) UCL	1.322
97.5% Chebyshev(Mean, Sd) UCL	1.35	99% Chebyshev(Mean, Sd) UCL	1.405

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.81	Mean	3.089
Maximum	3.295	Median	3.105
SD	0.155	Std. Error of Mean	0.0515
Coefficient of Variation	0.05	Skewness	-0.7
Mean of logged Data	1.127	SD of logged Data	0.0508

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.185	95% Adjusted-CLT UCL (Chen-1995)	3.161
		95% Modified-t UCL (Johnson-1978)	3.183

Nonparametric Distribution Free UCLs

95% CLT UCL	3.174	95% Jackknife UCL	3.185
95% Standard Bootstrap UCL	3.169	95% Bootstrap-t UCL	3.168
95% Hall's Bootstrap UCL	3.164	95% Percentile Bootstrap UCL	3.169
95% BCA Bootstrap UCL	3.159		
90% Chebyshev(Mean, Sd) UCL	3.244	95% Chebyshev(Mean, Sd) UCL	3.314
97.5% Chebyshev(Mean, Sd) UCL	3.411	99% Chebyshev(Mean, Sd) UCL	3.602

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.764	Mean	1.475
Maximum	2.54	Median	0.99
SD	0.735	Std. Error of Mean	0.245
Coefficient of Variation	0.498	Skewness	0.63
Mean of logged Data	0.282	SD of logged Data	0.485

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.931	95% Adjusted-CLT UCL (Chen-1995)	1.933
		95% Modified-t UCL (Johnson-1978)	1.939

Nonparametric Distribution Free UCLs

95% CLT UCL	1.878	95% Jackknife UCL	1.931
95% Standard Bootstrap UCL	1.859	95% Bootstrap-t UCL	1.989
95% Hall's Bootstrap UCL	1.781	95% Percentile Bootstrap UCL	1.859
95% BCA Bootstrap UCL	1.925		
90% Chebyshev(Mean, Sd) UCL	2.21	95% Chebyshev(Mean, Sd) UCL	2.543
97.5% Chebyshev(Mean, Sd) UCL	3.005	99% Chebyshev(Mean, Sd) UCL	3.912

Suggested UCL to Use

95% Student's-t UCL	1.931	or 95% Modified-t UCL	1.939

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.23	Mean	2.972
Maximum	3.295	Median	3.105
SD	0.368	Std. Error of Mean	0.123
Coefficient of Variation	0.124	Skewness	-1.528
Mean of logged Data	1.081	SD of logged Data	0.135

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.2	95% Adjusted-CLT UCL (Chen-1995)	3.107
		95% Modified-t UCL (Johnson-1978)	3.189

Nonparametric Distribution Free UCLs

95% CLT UCL	3.173	95% Jackknife UCL	3.2
95% Standard Bootstrap UCL	3.159	95% Bootstrap-t UCL	3.147
95% Hall's Bootstrap UCL	3.109	95% Percentile Bootstrap UCL	3.148
95% BCA Bootstrap UCL	3.129		
90% Chebyshev(Mean, Sd) UCL	3.34	95% Chebyshev(Mean, Sd) UCL	3.507
97.5% Chebyshev(Mean, Sd) UCL	3.738	99% Chebyshev(Mean, Sd) UCL	4.193

Suggested UCL to Use

95% Student's-t UCL	3.2	or 95% Modified-t UCL	3.189

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	3.913
Maximum	5.97	Median	3.225
SD	1.205	Std. Error of Mean	0.402
Coefficient of Variation	0.308	Skewness	1.19
Mean of logged Data	1.327	SD of logged Data	0.279

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.659	95% Adjusted-CLT UCL (Chen-1995)	4.743
		95% Modified-t UCL (Johnson-1978)	4.686

Nonparametric Distribution Free UCLs

95% CLT UCL	4.573	95% Jackknife UCL	4.659
95% Standard Bootstrap UCL	4.531	95% Bootstrap-t UCL	5.503
95% Hall's Bootstrap UCL	4.542	95% Percentile Bootstrap UCL	4.527
95% BCA Bootstrap UCL	4.673		
90% Chebyshev(Mean, Sd) UCL	5.117	95% Chebyshev(Mean, Sd) UCL	5.663
97.5% Chebyshev(Mean, Sd) UCL	6.42	99% Chebyshev(Mean, Sd) UCL	7.908

Suggested UCL to Use

95% Student's-t UCL	4.659	or 95% Modified-t UCL	4.686

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:43:19 AM
From File	40005B_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.99	Mean	11.29
Maximum	12.7	Median	11.1
SD	0.968	Std. Error of Mean	0.323
Coefficient of Variation	0.0857	Skewness	-0.035
Mean of logged Data	2.42	SD of logged Data	0.0862

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.89	95% Adjusted-CLT UCL (Chen-1995)	11.81
		95% Modified-t UCL (Johnson-1978)	11.89

Nonparametric Distribution Free UCLs

95% CLT UCL	11.82	95% Jackknife UCL	11.89
95% Standard Bootstrap UCL	11.79	95% Bootstrap-t UCL	11.87
95% Hall's Bootstrap UCL	11.76	95% Percentile Bootstrap UCL	11.79
95% BCA Bootstrap UCL	11.81		
90% Chebyshev(Mean, Sd) UCL	12.26	95% Chebyshev(Mean, Sd) UCL	12.69
97.5% Chebyshev(Mean, Sd) UCL	13.3	99% Chebyshev(Mean, Sd) UCL	14.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.37	Mean	10.35
Maximum	14.3	Median	9.92
SD	1.507	Std. Error of Mean	0.502
Coefficient of Variation	0.146	Skewness	2.819

Mean of logged Data	2.329	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.28	95% Adjusted-CLT UCL (Chen-1995)	11.68
		95% Modified-t UCL (Johnson-1978)	11.36

Nonparametric Distribution Free UCLs

95% CLT UCL	11.17	95% Jackknife UCL	11.28
95% Standard Bootstrap UCL	11.14	95% Bootstrap-t UCL	14.41
95% Hall's Bootstrap UCL	15.68	95% Percentile Bootstrap UCL	11.28
95% BCA Bootstrap UCL	11.46		
90% Chebyshev(Mean, Sd) UCL	11.85	95% Chebyshev(Mean, Sd) UCL	12.53
97.5% Chebyshev(Mean, Sd) UCL	13.48	99% Chebyshev(Mean, Sd) UCL	15.34

Suggested UCL to Use

95% Student's-t UCL	11.28	or 95% Modified-t UCL	11.36

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.9	Mean	43.81
Maximum	47.4	Median	43.4
SD	2.348	Std. Error of Mean	0.783
Coefficient of Variation	0.0536	Skewness	0.311
Mean of logged Data	3.779	SD of logged Data	0.0533

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.27	95% Adjusted-CLT UCL (Chen-1995)	45.18
		95% Modified-t UCL (Johnson-1978)	45.28

Nonparametric Distribution Free UCLs

95% CLT UCL	45.1	95% Jackknife UCL	45.27
95% Standard Bootstrap UCL	45.02	95% Bootstrap-t UCL	45.46
95% Hall's Bootstrap UCL	45.11	95% Percentile Bootstrap UCL	45.03
95% BCA Bootstrap UCL	45.12		
90% Chebyshev(Mean, Sd) UCL	46.16	95% Chebyshev(Mean, Sd) UCL	47.22
97.5% Chebyshev(Mean, Sd) UCL	48.7	99% Chebyshev(Mean, Sd) UCL	51.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.625	Mean	1.228
Maximum	1.96	Median	0.854
SD	0.617	Std. Error of Mean	0.206
Coefficient of Variation	0.503	Skewness	0.271
Mean of logged Data	0.0865	SD of logged Data	0.519

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.61	95% Adjusted-CLT UCL (Chen-1995)	1.586
		95% Modified-t UCL (Johnson-1978)	1.614

Nonparametric Distribution Free UCLs

95% CLT UCL	1.566	95% Jackknife UCL	1.61
95% Standard Bootstrap UCL	1.543	95% Bootstrap-t UCL	1.594
95% Hall's Bootstrap UCL	1.462	95% Percentile Bootstrap UCL	1.534
95% BCA Bootstrap UCL	1.554		
90% Chebyshev(Mean, Sd) UCL	1.845	95% Chebyshev(Mean, Sd) UCL	2.125
97.5% Chebyshev(Mean, Sd) UCL	2.513	99% Chebyshev(Mean, Sd) UCL	3.276

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.476	Mean	0.509
Maximum	0.545	Median	0.515
SD	0.0256	Std. Error of Mean	0.00852
Coefficient of Variation	0.0502	Skewness	-0.152
Mean of logged Data	-0.677	SD of logged Data	0.0505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.525	95% Adjusted-CLT UCL (Chen-1995)	0.522
		95% Modified-t UCL (Johnson-1978)	0.525

Nonparametric Distribution Free UCLs

95% CLT UCL	0.523	95% Jackknife UCL	0.525
95% Standard Bootstrap UCL	0.522	95% Bootstrap-t UCL	0.524
95% Hall's Bootstrap UCL	0.521	95% Percentile Bootstrap UCL	0.522
95% BCA Bootstrap UCL	0.522		
90% Chebyshev(Mean, Sd) UCL	0.534	95% Chebyshev(Mean, Sd) UCL	0.546
97.5% Chebyshev(Mean, Sd) UCL	0.562	99% Chebyshev(Mean, Sd) UCL	0.594

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	2.054
Maximum	2.165	Median	2.095
SD	0.0887	Std. Error of Mean	0.0296
Coefficient of Variation	0.0432	Skewness	-0.455
Mean of logged Data	0.719	SD of logged Data	0.0435

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.109	95% Adjusted-CLT UCL (Chen-1995)	2.098
		95% Modified-t UCL (Johnson-1978)	2.109

Nonparametric Distribution Free UCLs

95% CLT UCL	2.103	95% Jackknife UCL	2.109
95% Standard Bootstrap UCL	2.101	95% Bootstrap-t UCL	2.104
95% Hall's Bootstrap UCL	2.093	95% Percentile Bootstrap UCL	2.101
95% BCA Bootstrap UCL	2.096		
90% Chebyshev(Mean, Sd) UCL	2.143	95% Chebyshev(Mean, Sd) UCL	2.183
97.5% Chebyshev(Mean, Sd) UCL	2.239	99% Chebyshev(Mean, Sd) UCL	2.348

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.8	Mean	2.032
Maximum	2.165	Median	2.105
SD	0.125	Std. Error of Mean	0.0417
Coefficient of Variation	0.0615	Skewness	-0.752
Mean of logged Data	0.707	SD of logged Data	0.0628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.109	95% Adjusted-CLT UCL (Chen-1995)	2.089
		95% Modified-t UCL (Johnson-1978)	2.107

Nonparametric Distribution Free UCLs

95% CLT UCL	2.1	95% Jackknife UCL	2.109
95% Standard Bootstrap UCL	2.095	95% Bootstrap-t UCL	2.1
95% Hall's Bootstrap UCL	2.089	95% Percentile Bootstrap UCL	2.096
95% BCA Bootstrap UCL	2.088		
90% Chebyshev(Mean, Sd) UCL	2.157	95% Chebyshev(Mean, Sd) UCL	2.213
97.5% Chebyshev(Mean, Sd) UCL	2.292	99% Chebyshev(Mean, Sd) UCL	2.446

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	2.171
Maximum	2.995	Median	2.105
SD	0.319	Std. Error of Mean	0.106

Coefficient of Variation	0.147	Skewness	2.642
Mean of logged Data	0.767	SD of logged Data	0.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.369	95% Adjusted-CLT UCL (Chen-1995)	2.446
		95% Modified-t UCL (Johnson-1978)	2.384

Nonparametric Distribution Free UCLs

95% CLT UCL	2.346	95% Jackknife UCL	2.369
95% Standard Bootstrap UCL	2.334	95% Bootstrap-t UCL	2.694
95% Hall's Bootstrap UCL	3.176	95% Percentile Bootstrap UCL	2.371
95% BCA Bootstrap UCL	2.426		
90% Chebyshev(Mean, Sd) UCL	2.49	95% Chebyshev(Mean, Sd) UCL	2.634
97.5% Chebyshev(Mean, Sd) UCL	2.835	99% Chebyshev(Mean, Sd) UCL	3.228

Suggested UCL to Use

95% Student's-t UCL	2.369	or 95% Modified-t UCL	2.384

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.631
Maximum	4.76	Median	3.265
SD	0.696	Std. Error of Mean	0.232
Coefficient of Variation	0.192	Skewness	0.826
Mean of logged Data	1.274	SD of logged Data	0.183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.062	95% Adjusted-CLT UCL (Chen-1995)	4.08
		95% Modified-t UCL (Johnson-1978)	4.073

Nonparametric Distribution Free UCLs

95% CLT UCL	4.012	95% Jackknife UCL	4.062
95% Standard Bootstrap UCL	3.99	95% Bootstrap-t UCL	4.174
95% Hall's Bootstrap UCL	3.912	95% Percentile Bootstrap UCL	4.011
95% BCA Bootstrap UCL	4.08		
90% Chebyshev(Mean, Sd) UCL	4.327	95% Chebyshev(Mean, Sd) UCL	4.642
97.5% Chebyshev(Mean, Sd) UCL	5.079	99% Chebyshev(Mean, Sd) UCL	5.939

Suggested UCL to Use

95% Student's-t UCL	4.062	or 95% Modified-t UCL	4.073

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.22	Mean	3.074
Maximum	3.335	Median	3.225
SD	0.343	Std. Error of Mean	0.114
Coefficient of Variation	0.112	Skewness	-2.327
Mean of logged Data	1.117	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.287	95% Adjusted-CLT UCL (Chen-1995)	3.168
		95% Modified-t UCL (Johnson-1978)	3.272

Nonparametric Distribution Free UCLs

95% CLT UCL	3.263	95% Jackknife UCL	3.287
95% Standard Bootstrap UCL	3.251	95% Bootstrap-t UCL	3.216
95% Hall's Bootstrap UCL	3.188	95% Percentile Bootstrap UCL	3.226
95% BCA Bootstrap UCL	3.203		
90% Chebyshev(Mean, Sd) UCL	3.418	95% Chebyshev(Mean, Sd) UCL	3.573
97.5% Chebyshev(Mean, Sd) UCL	3.789	99% Chebyshev(Mean, Sd) UCL	4.213

Suggested UCL to Use

95% Student's-t UCL	3.287	or 95% Modified-t UCL	3.272

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	2.06
Maximum	2.215	Median	2.095
SD	0.0976	Std. Error of Mean	0.0325
Coefficient of Variation	0.0474	Skewness	-0.0792

Mean of logged Data	0.722	SD of logged Data	0.0475

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.12	95% Adjusted-CLT UCL (Chen-1995)	2.113
		95% Modified-t UCL (Johnson-1978)	2.12

Nonparametric Distribution Free UCLs

95% CLT UCL	2.113	95% Jackknife UCL	2.12
95% Standard Bootstrap UCL	2.11	95% Bootstrap-t UCL	2.115
95% Hall's Bootstrap UCL	2.111	95% Percentile Bootstrap UCL	2.113
95% BCA Bootstrap UCL	2.109		
90% Chebyshev(Mean, Sd) UCL	2.158	95% Chebyshev(Mean, Sd) UCL	2.202
97.5% Chebyshev(Mean, Sd) UCL	2.263	99% Chebyshev(Mean, Sd) UCL	2.384

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	2.553
Maximum	3.61	Median	2.125
SD	0.725	Std. Error of Mean	0.242
Coefficient of Variation	0.284	Skewness	0.816
Mean of logged Data	0.904	SD of logged Data	0.267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.002	95% Adjusted-CLT UCL (Chen-1995)	3.02
		95% Modified-t UCL (Johnson-1978)	3.013

Nonparametric Distribution Free UCLs

95% CLT UCL	2.95	95% Jackknife UCL	3.002
95% Standard Bootstrap UCL	2.933	95% Bootstrap-t UCL	3.08
95% Hall's Bootstrap UCL	2.804	95% Percentile Bootstrap UCL	2.91
95% BCA Bootstrap UCL	2.943		

90% Chebyshev(Mean, Sd) UCL	3.277	95% Chebyshev(Mean, Sd) UCL	3.606
97.5% Chebyshev(Mean, Sd) UCL	4.061	99% Chebyshev(Mean, Sd) UCL	4.956

Suggested UCL to Use

95% Student's-t UCL	3.002	or 95% Modified-t UCL	3.013

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.161
Maximum	3.335	Median	3.225
SD	0.137	Std. Error of Mean	0.0457
Coefficient of Variation	0.0434	Skewness	-0.438
Mean of logged Data	1.15	SD of logged Data	0.0437

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.246	95% Adjusted-CLT UCL (Chen-1995)	3.229
		95% Modified-t UCL (Johnson-1978)	3.245

Nonparametric Distribution Free UCLs

95% CLT UCL	3.236	95% Jackknife UCL	3.246
95% Standard Bootstrap UCL	3.231	95% Bootstrap-t UCL	3.245
95% Hall's Bootstrap UCL	3.221	95% Percentile Bootstrap UCL	3.23
95% BCA Bootstrap UCL	3.228		
90% Chebyshev(Mean, Sd) UCL	3.298	95% Chebyshev(Mean, Sd) UCL	3.36
97.5% Chebyshev(Mean, Sd) UCL	3.446	99% Chebyshev(Mean, Sd) UCL	3.616

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.935	Mean	3.192
Maximum	5.86	Median	2.12

SD	1.73	Std. Error of Mean	0.577
Coefficient of Variation	0.542	Skewness	0.947
Mean of logged Data	1.045	SD of logged Data	0.492

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.264	95% Adjusted-CLT UCL (Chen-1995)	4.335
		95% Modified-t UCL (Johnson-1978)	4.295

Nonparametric Distribution Free UCLs

95% CLT UCL	4.141	95% Jackknife UCL	4.264
95% Standard Bootstrap UCL	4.103	95% Bootstrap-t UCL	4.683
95% Hall's Bootstrap UCL	3.785	95% Percentile Bootstrap UCL	4.101
95% BCA Bootstrap UCL	4.314		
90% Chebyshev(Mean, Sd) UCL	4.922	95% Chebyshev(Mean, Sd) UCL	5.706
97.5% Chebyshev(Mean, Sd) UCL	6.793	99% Chebyshev(Mean, Sd) UCL	8.93

Suggested UCL to Use

95% Student's-t UCL	4.264	or 95% Modified-t UCL	4.295

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.19	Mean	1.264
Maximum	1.335	Median	1.29
SD	0.0545	Std. Error of Mean	0.0182
Coefficient of Variation	0.0431	Skewness	-0.416
Mean of logged Data	0.234	SD of logged Data	0.0434

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.298	95% Adjusted-CLT UCL (Chen-1995)	1.292
		95% Modified-t UCL (Johnson-1978)	1.298

Nonparametric Distribution Free UCLs

95% CLT UCL	1.294	95% Jackknife UCL	1.298
95% Standard Bootstrap UCL	1.292	95% Bootstrap-t UCL	1.294
95% Hall's Bootstrap UCL	1.288	95% Percentile Bootstrap UCL	1.293
95% BCA Bootstrap UCL	1.29		
90% Chebyshev(Mean, Sd) UCL	1.319	95% Chebyshev(Mean, Sd) UCL	1.344

97.5% Chebyshev(Mean, Sd) UCL	1.378	99% Chebyshev(Mean, Sd) UCL	1.445

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.26	Mean	2.986
Maximum	3.335	Median	3.15
SD	0.395	Std. Error of Mean	0.132
Coefficient of Variation	0.132	Skewness	-1.269
Mean of logged Data	1.085	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.231	95% Adjusted-CLT UCL (Chen-1995)	3.143
		95% Modified-t UCL (Johnson-1978)	3.222

Nonparametric Distribution Free UCLs

95% CLT UCL	3.203	95% Jackknife UCL	3.231
95% Standard Bootstrap UCL	3.192	95% Bootstrap-t UCL	3.19
95% Hall's Bootstrap UCL	3.143	95% Percentile Bootstrap UCL	3.188
95% BCA Bootstrap UCL	3.146		
90% Chebyshev(Mean, Sd) UCL	3.382	95% Chebyshev(Mean, Sd) UCL	3.561
97.5% Chebyshev(Mean, Sd) UCL	3.809	99% Chebyshev(Mean, Sd) UCL	4.298

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.89	Mean	1.437
Maximum	2.34	Median	1.2
SD	0.549	Std. Error of Mean	0.183
Coefficient of Variation	0.382	Skewness	0.639
Mean of logged Data	0.3	SD of logged Data	0.371

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.777	95% Adjusted-CLT UCL (Chen-1995)	1.78
		95% Modified-t UCL (Johnson-1978)	1.784

Nonparametric Distribution Free UCLs

95% CLT UCL	1.738	95% Jackknife UCL	1.777
95% Standard Bootstrap UCL	1.723	95% Bootstrap-t UCL	1.838
95% Hall's Bootstrap UCL	1.695	95% Percentile Bootstrap UCL	1.735
95% BCA Bootstrap UCL	1.757		
90% Chebyshev(Mean, Sd) UCL	1.986	95% Chebyshev(Mean, Sd) UCL	2.235
97.5% Chebyshev(Mean, Sd) UCL	2.581	99% Chebyshev(Mean, Sd) UCL	3.259

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.77	Mean	3.133
Maximum	3.335	Median	3.2
SD	0.183	Std. Error of Mean	0.0609
Coefficient of Variation	0.0584	Skewness	-1.05
Mean of logged Data	1.14	SD of logged Data	0.0599

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.246	95% Adjusted-CLT UCL (Chen-1995)	3.21
		95% Modified-t UCL (Johnson-1978)	3.243

Nonparametric Distribution Free UCLs

95% CLT UCL	3.233	95% Jackknife UCL	3.246
95% Standard Bootstrap UCL	3.227	95% Bootstrap-t UCL	3.228
95% Hall's Bootstrap UCL	3.211	95% Percentile Bootstrap UCL	3.222

95% BCA Bootstrap UCL	3.217		
90% Chebyshev(Mean, Sd) UCL	3.316	95% Chebyshev(Mean, Sd) UCL	3.398
97.5% Chebyshev(Mean, Sd) UCL	3.513	99% Chebyshev(Mean, Sd) UCL	3.739

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.762
Maximum	5.28	Median	3.265
SD	0.912	Std. Error of Mean	0.304
Coefficient of Variation	0.243	Skewness	1.007
Mean of logged Data	1.301	SD of logged Data	0.227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.327	95% Adjusted-CLT UCL (Chen-1995)	4.371
		95% Modified-t UCL (Johnson-1978)	4.344

Nonparametric Distribution Free UCLs

95% CLT UCL	4.262	95% Jackknife UCL	4.327
95% Standard Bootstrap UCL	4.247	95% Bootstrap-t UCL	4.688
95% Hall's Bootstrap UCL	4.183	95% Percentile Bootstrap UCL	4.262
95% BCA Bootstrap UCL	4.311		
90% Chebyshev(Mean, Sd) UCL	4.674	95% Chebyshev(Mean, Sd) UCL	5.087
97.5% Chebyshev(Mean, Sd) UCL	5.661	99% Chebyshev(Mean, Sd) UCL	6.787

Suggested UCL to Use

95% Student's-t UCL	4.327	or 95% Modified-t UCL	4.344

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:44:34 AM
From File	40005C_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.5	Mean	14.04
Maximum	16.3	Median	14.9
SD	2.308	Std. Error of Mean	0.769
Coefficient of Variation	0.164	Skewness	-0.645
Mean of logged Data	2.629	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.48	95% Adjusted-CLT UCL (Chen-1995)	15.13
		95% Modified-t UCL (Johnson-1978)	15.45

Nonparametric Distribution Free UCLs

95% CLT UCL	15.31	95% Jackknife UCL	15.48
95% Standard Bootstrap UCL	15.22	95% Bootstrap-t UCL	15.27
95% Hall's Bootstrap UCL	15	95% Percentile Bootstrap UCL	15.17
95% BCA Bootstrap UCL	15.09		
90% Chebyshev(Mean, Sd) UCL	16.35	95% Chebyshev(Mean, Sd) UCL	17.4
97.5% Chebyshev(Mean, Sd) UCL	18.85	99% Chebyshev(Mean, Sd) UCL	21.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	10.3	Mean	11.48
Maximum	12.1	Median	11.7
SD	0.595	Std. Error of Mean	0.198
Coefficient of Variation	0.0519	Skewness	-1.068

Mean of logged Data	2.439	SD of logged Data	0.0531

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.85	95% Adjusted-CLT UCL (Chen-1995)	11.73
		95% Modified-t UCL (Johnson-1978)	11.84

Nonparametric Distribution Free UCLs

95% CLT UCL	11.8	95% Jackknife UCL	11.85
95% Standard Bootstrap UCL	11.79	95% Bootstrap-t UCL	11.79
95% Hall's Bootstrap UCL	11.73	95% Percentile Bootstrap UCL	11.77
95% BCA Bootstrap UCL	11.72		
90% Chebyshev(Mean, Sd) UCL	12.07	95% Chebyshev(Mean, Sd) UCL	12.34
97.5% Chebyshev(Mean, Sd) UCL	12.72	99% Chebyshev(Mean, Sd) UCL	13.45

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	40.4	Mean	49.94
Maximum	56.5	Median	51.3
SD	6.069	Std. Error of Mean	2.023
Coefficient of Variation	0.122	Skewness	-0.541
Mean of logged Data	3.904	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.71	95% Adjusted-CLT UCL (Chen-1995)	52.88
		95% Modified-t UCL (Johnson-1978)	53.65

Nonparametric Distribution Free UCLs

95% CLT UCL	53.27	95% Jackknife UCL	53.71
95% Standard Bootstrap UCL	53.05	95% Bootstrap-t UCL	53.29
95% Hall's Bootstrap UCL	52.61	95% Percentile Bootstrap UCL	52.83
95% BCA Bootstrap UCL	52.79		

90% Chebyshev(Mean, Sd) UCL	56.01	95% Chebyshev(Mean, Sd) UCL	58.76
97.5% Chebyshev(Mean, Sd) UCL	62.58	99% Chebyshev(Mean, Sd) UCL	70.07

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.9	Mean	1.964
Maximum	2	Median	1.97
SD	0.0364	Std. Error of Mean	0.0121
Coefficient of Variation	0.0185	Skewness	-0.819
Mean of logged Data	0.675	SD of logged Data	0.0187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.987	95% Adjusted-CLT UCL (Chen-1995)	1.981
		95% Modified-t UCL (Johnson-1978)	1.986

Nonparametric Distribution Free UCLs

95% CLT UCL	1.984	95% Jackknife UCL	1.987
95% Standard Bootstrap UCL	1.983	95% Bootstrap-t UCL	1.983
95% Hall's Bootstrap UCL	1.98	95% Percentile Bootstrap UCL	1.982
95% BCA Bootstrap UCL	1.98		
90% Chebyshev(Mean, Sd) UCL	2.001	95% Chebyshev(Mean, Sd) UCL	2.017
97.5% Chebyshev(Mean, Sd) UCL	2.04	99% Chebyshev(Mean, Sd) UCL	2.085

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	0.505	Mean	0.523
Maximum	0.535	Median	0.525
SD	0.0103	Std. Error of Mean	0.00345
Coefficient of Variation	0.0198	Skewness	-0.755
Mean of logged Data	-0.649	SD of logged Data	0.0199

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.529	95% Adjusted-CLT UCL (Chen-1995)	0.528
		95% Modified-t UCL (Johnson-1978)	0.529

Nonparametric Distribution Free UCLs

95% CLT UCL	0.528	95% Jackknife UCL	0.529
95% Standard Bootstrap UCL	0.528	95% Bootstrap-t UCL	0.528
95% Hall's Bootstrap UCL	0.527	95% Percentile Bootstrap UCL	0.528
95% BCA Bootstrap UCL	0.527		
90% Chebyshev(Mean, Sd) UCL	0.533	95% Chebyshev(Mean, Sd) UCL	0.538
97.5% Chebyshev(Mean, Sd) UCL	0.544	99% Chebyshev(Mean, Sd) UCL	0.557

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	2.126
Maximum	2.165	Median	2.14
SD	0.039	Std. Error of Mean	0.013
Coefficient of Variation	0.0183	Skewness	-0.917
Mean of logged Data	0.754	SD of logged Data	0.0184

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.15	95% Adjusted-CLT UCL (Chen-1995)	2.143
		95% Modified-t UCL (Johnson-1978)	2.15

Nonparametric Distribution Free UCLs

95% CLT UCL	2.147	95% Jackknife UCL	2.15
95% Standard Bootstrap UCL	2.147	95% Bootstrap-t UCL	2.148
95% Hall's Bootstrap UCL	2.143	95% Percentile Bootstrap UCL	2.145
95% BCA Bootstrap UCL	2.143		
90% Chebyshev(Mean, Sd) UCL	2.165	95% Chebyshev(Mean, Sd) UCL	2.183
97.5% Chebyshev(Mean, Sd) UCL	2.207	99% Chebyshev(Mean, Sd) UCL	2.255

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	2.236
Maximum	2.97	Median	2.13
SD	0.289	Std. Error of Mean	0.0963
Coefficient of Variation	0.129	Skewness	2.543
Mean of logged Data	0.798	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.415	95% Adjusted-CLT UCL (Chen-1995)	2.481
		95% Modified-t UCL (Johnson-1978)	2.428

Nonparametric Distribution Free UCLs

95% CLT UCL	2.394	95% Jackknife UCL	2.415
95% Standard Bootstrap UCL	2.384	95% Bootstrap-t UCL	3.337
95% Hall's Bootstrap UCL	3.365	95% Percentile Bootstrap UCL	2.412
95% BCA Bootstrap UCL	2.501		
90% Chebyshev(Mean, Sd) UCL	2.525	95% Chebyshev(Mean, Sd) UCL	2.656
97.5% Chebyshev(Mean, Sd) UCL	2.837	99% Chebyshev(Mean, Sd) UCL	3.194

Suggested UCL to Use

95% Student's-t UCL	2.415	or 95% Modified-t UCL	2.428

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	2.312
Maximum	3.01	Median	2.15
SD	0.329	Std. Error of Mean	0.11
Coefficient of Variation	0.142	Skewness	1.447
Mean of logged Data	0.83	SD of logged Data	0.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.516	95% Adjusted-CLT UCL (Chen-1995)	2.549
		95% Modified-t UCL (Johnson-1978)	2.525

Nonparametric Distribution Free UCLs

95% CLT UCL	2.493	95% Jackknife UCL	2.516
95% Standard Bootstrap UCL	2.481	95% Bootstrap-t UCL	2.673
95% Hall's Bootstrap UCL	2.491	95% Percentile Bootstrap UCL	2.495
95% BCA Bootstrap UCL	2.538		
90% Chebyshev(Mean, Sd) UCL	2.642	95% Chebyshev(Mean, Sd) UCL	2.791
97.5% Chebyshev(Mean, Sd) UCL	2.998	99% Chebyshev(Mean, Sd) UCL	3.405

Suggested UCL to Use

95% Student's-t UCL	2.516	or 95% Modified-t UCL	2.525

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	3.996
Maximum	6.19	Median	3.31
SD	1.16	Std. Error of Mean	0.387
Coefficient of Variation	0.29	Skewness	1.132
Mean of logged Data	1.352	SD of logged Data	0.266

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.715	95% Adjusted-CLT UCL (Chen-1995)	4.788
		95% Modified-t UCL (Johnson-1978)	4.739

Nonparametric Distribution Free UCLs

95% CLT UCL	4.632	95% Jackknife UCL	4.715
95% Standard Bootstrap UCL	4.595	95% Bootstrap-t UCL	4.992
95% Hall's Bootstrap UCL	4.415	95% Percentile Bootstrap UCL	4.631
95% BCA Bootstrap UCL	4.669		
90% Chebyshev(Mean, Sd) UCL	5.156	95% Chebyshev(Mean, Sd) UCL	5.681
97.5% Chebyshev(Mean, Sd) UCL	6.41	99% Chebyshev(Mean, Sd) UCL	7.843

Suggested UCL to Use

95% Student's-t UCL	4.715	or 95% Modified-t UCL	4.739

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.45	Mean	3.136
Maximum	3.315	Median	3.23
SD	0.277	Std. Error of Mean	0.0925
Coefficient of Variation	0.0885	Skewness	-2.312
Mean of logged Data	1.139	SD of logged Data	0.0969

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.307	95% Adjusted-CLT UCL (Chen-1995)	3.211
		95% Modified-t UCL (Johnson-1978)	3.296

Nonparametric Distribution Free UCLs

95% CLT UCL	3.288	95% Jackknife UCL	3.307
95% Standard Bootstrap UCL	3.281	95% Bootstrap-t UCL	3.25
95% Hall's Bootstrap UCL	3.233	95% Percentile Bootstrap UCL	3.26
95% BCA Bootstrap UCL	3.233		
90% Chebyshev(Mean, Sd) UCL	3.413	95% Chebyshev(Mean, Sd) UCL	3.539
97.5% Chebyshev(Mean, Sd) UCL	3.713	99% Chebyshev(Mean, Sd) UCL	4.055

Suggested UCL to Use

95% Student's-t UCL	3.307	or 95% Modified-t UCL	3.296

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	2.178
Maximum	2.44	Median	2.15
SD	0.126	Std. Error of Mean	0.0419
Coefficient of Variation	0.0577	Skewness	1.453
Mean of logged Data	0.777	SD of logged Data	0.056

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.256	95% Adjusted-CLT UCL (Chen-1995)	2.269
		95% Modified-t UCL (Johnson-1978)	2.26

Nonparametric Distribution Free UCLs

95% CLT UCL	2.247	95% Jackknife UCL	2.256
95% Standard Bootstrap UCL	2.244	95% Bootstrap-t UCL	2.38
95% Hall's Bootstrap UCL	2.744	95% Percentile Bootstrap UCL	2.248
95% BCA Bootstrap UCL	2.268		
90% Chebyshev(Mean, Sd) UCL	2.304	95% Chebyshev(Mean, Sd) UCL	2.361
97.5% Chebyshev(Mean, Sd) UCL	2.44	99% Chebyshev(Mean, Sd) UCL	2.595

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	2.871
Maximum	5.06	Median	2.15
SD	1.18	Std. Error of Mean	0.393
Coefficient of Variation	0.411	Skewness	1.117
Mean of logged Data	0.989	SD of logged Data	0.37

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.602	95% Adjusted-CLT UCL (Chen-1995)	3.674
		95% Modified-t UCL (Johnson-1978)	3.627

Nonparametric Distribution Free UCLs

95% CLT UCL	3.518	95% Jackknife UCL	3.602

95% Standard Bootstrap UCL	3.474	95% Bootstrap-t UCL	3.981
95% Hall's Bootstrap UCL	3.285	95% Percentile Bootstrap UCL	3.529
95% BCA Bootstrap UCL	3.584		
90% Chebyshev(Mean, Sd) UCL	4.051	95% Chebyshev(Mean, Sd) UCL	4.585
97.5% Chebyshev(Mean, Sd) UCL	5.327	99% Chebyshev(Mean, Sd) UCL	6.783

Suggested UCL to Use

95% Student's-t UCL	3.602	or 95% Modified-t UCL	3.627

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	3.272
Maximum	3.33	Median	3.29
SD	0.0594	Std. Error of Mean	0.0198
Coefficient of Variation	0.0182	Skewness	-0.888
Mean of logged Data	1.185	SD of logged Data	0.0183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.309	95% Adjusted-CLT UCL (Chen-1995)	3.298
		95% Modified-t UCL (Johnson-1978)	3.308

Nonparametric Distribution Free UCLs

95% CLT UCL	3.304	95% Jackknife UCL	3.309
95% Standard Bootstrap UCL	3.303	95% Bootstrap-t UCL	3.302
95% Hall's Bootstrap UCL	3.297	95% Percentile Bootstrap UCL	3.302
95% BCA Bootstrap UCL	3.297		
90% Chebyshev(Mean, Sd) UCL	3.331	95% Chebyshev(Mean, Sd) UCL	3.358
97.5% Chebyshev(Mean, Sd) UCL	3.395	99% Chebyshev(Mean, Sd) UCL	3.469

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	1.99	Mean	2.914
Maximum	6.38	Median	2.15
SD	1.641	Std. Error of Mean	0.547
Coefficient of Variation	0.563	Skewness	1.77
Mean of logged Data	0.965	SD of logged Data	0.446

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.932	95% Adjusted-CLT UCL (Chen-1995)	4.159
		95% Modified-t UCL (Johnson-1978)	3.986

Nonparametric Distribution Free UCLs

95% CLT UCL	3.814	95% Jackknife UCL	3.932
95% Standard Bootstrap UCL	3.759	95% Bootstrap-t UCL	25.64
95% Hall's Bootstrap UCL	21.85	95% Percentile Bootstrap UCL	3.873
95% BCA Bootstrap UCL	4.038		
90% Chebyshev(Mean, Sd) UCL	4.556	95% Chebyshev(Mean, Sd) UCL	5.299
97.5% Chebyshev(Mean, Sd) UCL	6.331	99% Chebyshev(Mean, Sd) UCL	8.358

Suggested UCL to Use

95% Student's-t UCL	3.932	or 95% Modified-t UCL	3.986

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.265	Mean	1.309
Maximum	1.33	Median	1.315
SD	0.0236	Std. Error of Mean	0.00785
Coefficient of Variation	0.018	Skewness	-1.029
Mean of logged Data	0.269	SD of logged Data	0.0181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.323	95% Adjusted-CLT UCL (Chen-1995)	1.319
		95% Modified-t UCL (Johnson-1978)	1.323

Nonparametric Distribution Free UCLs

95% CLT UCL	1.322	95% Jackknife UCL	1.323
95% Standard Bootstrap UCL	1.321	95% Bootstrap-t UCL	1.321

95% Hall's Bootstrap UCL	1.319	95% Percentile Bootstrap UCL	1.321
95% BCA Bootstrap UCL	1.318		
90% Chebyshev(Mean, Sd) UCL	1.332	95% Chebyshev(Mean, Sd) UCL	1.343
97.5% Chebyshev(Mean, Sd) UCL	1.358	99% Chebyshev(Mean, Sd) UCL	1.387

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.58	Mean	3.087
Maximum	3.315	Median	3.2
SD	0.288	Std. Error of Mean	0.0959
Coefficient of Variation	0.0933	Skewness	-1.369
Mean of logged Data	1.123	SD of logged Data	0.0986

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.265	95% Adjusted-CLT UCL (Chen-1995)	3.198
		95% Modified-t UCL (Johnson-1978)	3.258

Nonparametric Distribution Free UCLs

95% CLT UCL	3.244	95% Jackknife UCL	3.265
95% Standard Bootstrap UCL	3.238	95% Bootstrap-t UCL	3.226
95% Hall's Bootstrap UCL	3.199	95% Percentile Bootstrap UCL	3.23
95% BCA Bootstrap UCL	3.209		
90% Chebyshev(Mean, Sd) UCL	3.375	95% Chebyshev(Mean, Sd) UCL	3.505
97.5% Chebyshev(Mean, Sd) UCL	3.686	99% Chebyshev(Mean, Sd) UCL	4.041

Suggested UCL to Use

95% Student's-t UCL	3.265	or 95% Modified-t UCL	3.258

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.736	Mean	1.001
Maximum	1.51	Median	0.95
SD	0.242	Std. Error of Mean	0.0808
Coefficient of Variation	0.242	Skewness	1.288
Mean of logged Data	-0.0225	SD of logged Data	0.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.151	95% Adjusted-CLT UCL (Chen-1995)	1.171
		95% Modified-t UCL (Johnson-1978)	1.157

Nonparametric Distribution Free UCLs

95% CLT UCL	1.134	95% Jackknife UCL	1.151
95% Standard Bootstrap UCL	1.125	95% Bootstrap-t UCL	1.262
95% Hall's Bootstrap UCL	2.015	95% Percentile Bootstrap UCL	1.136
95% BCA Bootstrap UCL	1.169		
90% Chebyshev(Mean, Sd) UCL	1.243	95% Chebyshev(Mean, Sd) UCL	1.353
97.5% Chebyshev(Mean, Sd) UCL	1.506	99% Chebyshev(Mean, Sd) UCL	1.805

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	3.291
Maximum	3.46	Median	3.31
SD	0.0867	Std. Error of Mean	0.0289
Coefficient of Variation	0.0264	Skewness	0.504
Mean of logged Data	1.191	SD of logged Data	0.0262

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.344	95% Adjusted-CLT UCL (Chen-1995)	3.343
		95% Modified-t UCL (Johnson-1978)	3.345

Nonparametric Distribution Free UCLs

95% CLT UCL	3.338	95% Jackknife UCL	3.344
95% Standard Bootstrap UCL	3.336	95% Bootstrap-t UCL	3.351
95% Hall's Bootstrap UCL	3.356	95% Percentile Bootstrap UCL	3.335
95% BCA Bootstrap UCL	3.337		
90% Chebyshev(Mean, Sd) UCL	3.377	95% Chebyshev(Mean, Sd) UCL	3.417
97.5% Chebyshev(Mean, Sd) UCL	3.471	99% Chebyshev(Mean, Sd) UCL	3.578

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	3.942
Maximum	5.93	Median	3.31
SD	1.088	Std. Error of Mean	0.363
Coefficient of Variation	0.276	Skewness	1.157
Mean of logged Data	1.342	SD of logged Data	0.253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.617	95% Adjusted-CLT UCL (Chen-1995)	4.688
		95% Modified-t UCL (Johnson-1978)	4.64

Nonparametric Distribution Free UCLs

95% CLT UCL	4.539	95% Jackknife UCL	4.617
95% Standard Bootstrap UCL	4.499	95% Bootstrap-t UCL	5.182
95% Hall's Bootstrap UCL	4.338	95% Percentile Bootstrap UCL	4.532
95% BCA Bootstrap UCL	4.679		
90% Chebyshev(Mean, Sd) UCL	5.03	95% Chebyshev(Mean, Sd) UCL	5.523
97.5% Chebyshev(Mean, Sd) UCL	6.207	99% Chebyshev(Mean, Sd) UCL	7.551

Suggested UCL to Use

95% Student's-t UCL	4.617	or 95% Modified-t UCL	4.64

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:45:51 AM
From File	40005D_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.1	Mean	14.82
Maximum	17.9	Median	14.8
SD	2.234	Std. Error of Mean	0.745
Coefficient of Variation	0.151	Skewness	-0.0549
Mean of logged Data	2.686	SD of logged Data	0.153

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.21	95% Adjusted-CLT UCL (Chen-1995)	16.03
		95% Modified-t UCL (Johnson-1978)	16.2

Nonparametric Distribution Free UCLs

95% CLT UCL	16.05	95% Jackknife UCL	16.21
95% Standard Bootstrap UCL	15.95	95% Bootstrap-t UCL	16.18
95% Hall's Bootstrap UCL	15.9	95% Percentile Bootstrap UCL	15.96
95% BCA Bootstrap UCL	15.94		
90% Chebyshev(Mean, Sd) UCL	17.06	95% Chebyshev(Mean, Sd) UCL	18.07
97.5% Chebyshev(Mean, Sd) UCL	19.47	99% Chebyshev(Mean, Sd) UCL	22.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	11.2	Mean	11.83
Maximum	13	Median	11.5
SD	0.721	Std. Error of Mean	0.24
Coefficient of Variation	0.0609	Skewness	0.679

Mean of logged Data	2.469	SD of logged Data	0.0601

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.28	95% Adjusted-CLT UCL (Chen-1995)	12.29
		95% Modified-t UCL (Johnson-1978)	12.29

Nonparametric Distribution Free UCLs

95% CLT UCL	12.23	95% Jackknife UCL	12.28
95% Standard Bootstrap UCL	12.21	95% Bootstrap-t UCL	12.39
95% Hall's Bootstrap UCL	12.15	95% Percentile Bootstrap UCL	12.22
95% BCA Bootstrap UCL	12.24		
90% Chebyshev(Mean, Sd) UCL	12.55	95% Chebyshev(Mean, Sd) UCL	12.88
97.5% Chebyshev(Mean, Sd) UCL	13.33	99% Chebyshev(Mean, Sd) UCL	14.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	45.1	Mean	52.04
Maximum	60.3	Median	52
SD	5.509	Std. Error of Mean	1.836
Coefficient of Variation	0.106	Skewness	0.0452
Mean of logged Data	3.947	SD of logged Data	0.106

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.46	95% Adjusted-CLT UCL (Chen-1995)	55.09
		95% Modified-t UCL (Johnson-1978)	55.46

Nonparametric Distribution Free UCLs

95% CLT UCL	55.07	95% Jackknife UCL	55.46
95% Standard Bootstrap UCL	54.91	95% Bootstrap-t UCL	55.45
95% Hall's Bootstrap UCL	54.8	95% Percentile Bootstrap UCL	54.92
95% BCA Bootstrap UCL	54.89		
90% Chebyshev(Mean, Sd) UCL	57.55	95% Chebyshev(Mean, Sd) UCL	60.05
97.5% Chebyshev(Mean, Sd) UCL	63.51	99% Chebyshev(Mean, Sd) UCL	70.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.972	Mean	1.704
Maximum	1.93	Median	1.89
SD	0.402	Std. Error of Mean	0.134
Coefficient of Variation	0.236	Skewness	-1.615
Mean of logged Data	0.501	SD of logged Data	0.287

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.953	95% Adjusted-CLT UCL (Chen-1995)	1.847
		95% Modified-t UCL (Johnson-1978)	1.941

Nonparametric Distribution Free UCLs

95% CLT UCL	1.924	95% Jackknife UCL	1.953
95% Standard Bootstrap UCL	1.917	95% Bootstrap-t UCL	1.875
95% Hall's Bootstrap UCL	1.845	95% Percentile Bootstrap UCL	1.906
95% BCA Bootstrap UCL	1.896		
90% Chebyshev(Mean, Sd) UCL	2.105	95% Chebyshev(Mean, Sd) UCL	2.287
97.5% Chebyshev(Mean, Sd) UCL	2.54	99% Chebyshev(Mean, Sd) UCL	3.036

Suggested UCL to Use

95% Student's-t UCL	1.953	or 95% Modified-t UCL	1.941

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.5	Mean	0.511
Maximum	0.525	Median	0.51
SD	0.00768	Std. Error of Mean	0.00256

Coefficient of Variation	0.015	Skewness	0.562
Mean of logged Data	-0.672	SD of logged Data	0.015

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.515	95% Adjusted-CLT UCL (Chen-1995)	0.515
		95% Modified-t UCL (Johnson-1978)	0.515

Nonparametric Distribution Free UCLs

95% CLT UCL	0.515	95% Jackknife UCL	0.515
95% Standard Bootstrap UCL	0.515	95% Bootstrap-t UCL	0.516
95% Hall's Bootstrap UCL	0.516	95% Percentile Bootstrap UCL	0.515
95% BCA Bootstrap UCL	0.515		
90% Chebyshev(Mean, Sd) UCL	0.518	95% Chebyshev(Mean, Sd) UCL	0.522
97.5% Chebyshev(Mean, Sd) UCL	0.527	99% Chebyshev(Mean, Sd) UCL	0.536

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.04	Mean	2.076
Maximum	2.13	Median	2.075
SD	0.0294	Std. Error of Mean	0.00981
Coefficient of Variation	0.0142	Skewness	0.581
Mean of logged Data	0.73	SD of logged Data	0.0141

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.094	95% Adjusted-CLT UCL (Chen-1995)	2.094
		95% Modified-t UCL (Johnson-1978)	2.094

Nonparametric Distribution Free UCLs

95% CLT UCL	2.092	95% Jackknife UCL	2.094
95% Standard Bootstrap UCL	2.091	95% Bootstrap-t UCL	2.097
95% Hall's Bootstrap UCL	2.094	95% Percentile Bootstrap UCL	2.091
95% BCA Bootstrap UCL	2.09		
90% Chebyshev(Mean, Sd) UCL	2.105	95% Chebyshev(Mean, Sd) UCL	2.118
97.5% Chebyshev(Mean, Sd) UCL	2.137	99% Chebyshev(Mean, Sd) UCL	2.173

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.75	Mean	2.089
Maximum	2.62	Median	2.055
SD	0.225	Std. Error of Mean	0.0751
Coefficient of Variation	0.108	Skewness	1.542
Mean of logged Data	0.732	SD of logged Data	0.103

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.229	95% Adjusted-CLT UCL (Chen-1995)	2.254
		95% Modified-t UCL (Johnson-1978)	2.236

Nonparametric Distribution Free UCLs

95% CLT UCL	2.213	95% Jackknife UCL	2.229
95% Standard Bootstrap UCL	2.208	95% Bootstrap-t UCL	2.346
95% Hall's Bootstrap UCL	2.958	95% Percentile Bootstrap UCL	2.213
95% BCA Bootstrap UCL	2.25		
90% Chebyshev(Mean, Sd) UCL	2.315	95% Chebyshev(Mean, Sd) UCL	2.417
97.5% Chebyshev(Mean, Sd) UCL	2.558	99% Chebyshev(Mean, Sd) UCL	2.837

Suggested UCL to Use

95% Student's-t UCL	2.229	or 95% Modified-t UCL	2.236

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.05	Mean	2.258
Maximum	3.36	Median	2.09
SD	0.424	Std. Error of Mean	0.141
Coefficient of Variation	0.188	Skewness	2.735
Mean of logged Data	0.802	SD of logged Data	0.16

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.521	95% Adjusted-CLT UCL (Chen-1995)	2.628
		95% Modified-t UCL (Johnson-1978)	2.543

Nonparametric Distribution Free UCLs

95% CLT UCL	2.491	95% Jackknife UCL	2.521
95% Standard Bootstrap UCL	2.479	95% Bootstrap-t UCL	3.618
95% Hall's Bootstrap UCL	3.498	95% Percentile Bootstrap UCL	2.526
95% BCA Bootstrap UCL	2.665		
90% Chebyshev(Mean, Sd) UCL	2.682	95% Chebyshev(Mean, Sd) UCL	2.874
97.5% Chebyshev(Mean, Sd) UCL	3.141	99% Chebyshev(Mean, Sd) UCL	3.664

Suggested UCL to Use

95% Student's-t UCL	2.521	or 95% Modified-t UCL	2.543

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	3.676
Maximum	5.84	Median	3.215
SD	0.905	Std. Error of Mean	0.302
Coefficient of Variation	0.246	Skewness	2.089
Mean of logged Data	1.28	SD of logged Data	0.212

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.237	95% Adjusted-CLT UCL (Chen-1995)	4.397
		95% Modified-t UCL (Johnson-1978)	4.272

Nonparametric Distribution Free UCLs

95% CLT UCL	4.172	95% Jackknife UCL	4.237
95% Standard Bootstrap UCL	4.152	95% Bootstrap-t UCL	5.309
95% Hall's Bootstrap UCL	5.786	95% Percentile Bootstrap UCL	4.195
95% BCA Bootstrap UCL	4.556		
90% Chebyshev(Mean, Sd) UCL	4.581	95% Chebyshev(Mean, Sd) UCL	4.991
97.5% Chebyshev(Mean, Sd) UCL	5.56	99% Chebyshev(Mean, Sd) UCL	6.678

Suggested UCL to Use

95% Student's-t UCL	4.237	or 95% Modified-t UCL	4.272

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.13	Mean	2.944
Maximum	3.22	Median	3.155
SD	0.452	Std. Error of Mean	0.151
Coefficient of Variation	0.153	Skewness	-1.593
Mean of logged Data	1.068	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.224	95% Adjusted-CLT UCL (Chen-1995)	3.106
		95% Modified-t UCL (Johnson-1978)	3.211

Nonparametric Distribution Free UCLs

95% CLT UCL	3.192	95% Jackknife UCL	3.224
95% Standard Bootstrap UCL	3.186	95% Bootstrap-t UCL	3.145
95% Hall's Bootstrap UCL	3.105	95% Percentile Bootstrap UCL	3.172
95% BCA Bootstrap UCL	3.158		
90% Chebyshev(Mean, Sd) UCL	3.396	95% Chebyshev(Mean, Sd) UCL	3.6
97.5% Chebyshev(Mean, Sd) UCL	3.884	99% Chebyshev(Mean, Sd) UCL	4.442

Suggested UCL to Use

95% Student's-t UCL	3.224	or 95% Modified-t UCL	3.211

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.04	Mean	2.073
Maximum	2.11	Median	2.075
SD	0.0252	Std. Error of Mean	0.00842
Coefficient of Variation	0.0122	Skewness	0.0566
Mean of logged Data	0.729	SD of logged Data	0.0122

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.089	95% Adjusted-CLT UCL (Chen-1995)	2.087
		95% Modified-t UCL (Johnson-1978)	2.089

Nonparametric Distribution Free UCLs

95% CLT UCL	2.087	95% Jackknife UCL	2.089
95% Standard Bootstrap UCL	2.086	95% Bootstrap-t UCL	2.09
95% Hall's Bootstrap UCL	2.085	95% Percentile Bootstrap UCL	2.087
95% BCA Bootstrap UCL	2.086		
90% Chebyshev(Mean, Sd) UCL	2.099	95% Chebyshev(Mean, Sd) UCL	2.11
97.5% Chebyshev(Mean, Sd) UCL	2.126	99% Chebyshev(Mean, Sd) UCL	2.157

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	2.645
Maximum	4.58	Median	2.09
SD	0.948	Std. Error of Mean	0.316
Coefficient of Variation	0.358	Skewness	1.346
Mean of logged Data	0.924	SD of logged Data	0.318

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.233	95% Adjusted-CLT UCL (Chen-1995)	3.316
		95% Modified-t UCL (Johnson-1978)	3.256

Nonparametric Distribution Free UCLs

95% CLT UCL	3.165	95% Jackknife UCL	3.233
95% Standard Bootstrap UCL	3.138	95% Bootstrap-t UCL	3.667
95% Hall's Bootstrap UCL	3.119	95% Percentile Bootstrap UCL	3.191
95% BCA Bootstrap UCL	3.239		
90% Chebyshev(Mean, Sd) UCL	3.593	95% Chebyshev(Mean, Sd) UCL	4.023
97.5% Chebyshev(Mean, Sd) UCL	4.619	99% Chebyshev(Mean, Sd) UCL	5.79

Suggested UCL to Use

95% Student's-t UCL	3.233	or 95% Modified-t UCL	3.256

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.14	Mean	3.193
Maximum	3.275	Median	3.195
SD	0.0449	Std. Error of Mean	0.015
Coefficient of Variation	0.0141	Skewness	0.542
Mean of logged Data	1.161	SD of logged Data	0.014

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.221	95% Adjusted-CLT UCL (Chen-1995)	3.22
		95% Modified-t UCL (Johnson-1978)	3.221

Nonparametric Distribution Free UCLs

95% CLT UCL	3.217	95% Jackknife UCL	3.221
95% Standard Bootstrap UCL	3.216	95% Bootstrap-t UCL	3.224
95% Hall's Bootstrap UCL	3.219	95% Percentile Bootstrap UCL	3.217
95% BCA Bootstrap UCL	3.218		
90% Chebyshev(Mean, Sd) UCL	3.238	95% Chebyshev(Mean, Sd) UCL	3.258
97.5% Chebyshev(Mean, Sd) UCL	3.286	99% Chebyshev(Mean, Sd) UCL	3.342

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	3.093
Maximum	5.54	Median	2.095
SD	1.34	Std. Error of Mean	0.447
Coefficient of Variation	0.433	Skewness	0.915
Mean of logged Data	1.052	SD of logged Data	0.406

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.923	95% Adjusted-CLT UCL (Chen-1995)	3.973
		95% Modified-t UCL (Johnson-1978)	3.946

Nonparametric Distribution Free UCLs

95% CLT UCL	3.827	95% Jackknife UCL	3.923
95% Standard Bootstrap UCL	3.781	95% Bootstrap-t UCL	4.106
95% Hall's Bootstrap UCL	3.904	95% Percentile Bootstrap UCL	3.822
95% BCA Bootstrap UCL	3.903		
90% Chebyshev(Mean, Sd) UCL	4.433	95% Chebyshev(Mean, Sd) UCL	5.039
97.5% Chebyshev(Mean, Sd) UCL	5.882	99% Chebyshev(Mean, Sd) UCL	7.536

Suggested UCL to Use

95% Student's-t UCL	3.923	or 95% Modified-t UCL	3.946

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.255	Mean	1.277
Maximum	1.31	Median	1.275
SD	0.0184	Std. Error of Mean	0.00612
Coefficient of Variation	0.0144	Skewness	0.553
Mean of logged Data	0.244	SD of logged Data	0.0143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.288	95% Adjusted-CLT UCL (Chen-1995)	1.288
		95% Modified-t UCL (Johnson-1978)	1.288

Nonparametric Distribution Free UCLs

95% CLT UCL	1.287	95% Jackknife UCL	1.288
95% Standard Bootstrap UCL	1.286	95% Bootstrap-t UCL	1.289
95% Hall's Bootstrap UCL	1.287	95% Percentile Bootstrap UCL	1.287
95% BCA Bootstrap UCL	1.287		
90% Chebyshev(Mean, Sd) UCL	1.295	95% Chebyshev(Mean, Sd) UCL	1.303
97.5% Chebyshev(Mean, Sd) UCL	1.315	99% Chebyshev(Mean, Sd) UCL	1.338

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.24	Mean	3.065
Maximum	3.22	Median	3.155
SD	0.311	Std. Error of Mean	0.104
Coefficient of Variation	0.102	Skewness	-2.923
Mean of logged Data	1.115	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.258	95% Adjusted-CLT UCL (Chen-1995)	3.128
		95% Modified-t UCL (Johnson-1978)	3.241

Nonparametric Distribution Free UCLs

95% CLT UCL	3.236	95% Jackknife UCL	3.258
95% Standard Bootstrap UCL	3.225	95% Bootstrap-t UCL	3.201
95% Hall's Bootstrap UCL	3.169	95% Percentile Bootstrap UCL	3.182
95% BCA Bootstrap UCL	3.173		
90% Chebyshev(Mean, Sd) UCL	3.376	95% Chebyshev(Mean, Sd) UCL	3.518
97.5% Chebyshev(Mean, Sd) UCL	3.713	99% Chebyshev(Mean, Sd) UCL	4.098

Suggested UCL to Use

95% Student's-t UCL	3.258	or 95% Modified-t UCL	3.241

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.636	Mean	1.201
Maximum	1.89	Median	0.95
SD	0.439	Std. Error of Mean	0.146
Coefficient of Variation	0.366	Skewness	0.325
Mean of logged Data	0.122	SD of logged Data	0.374

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.473	95% Adjusted-CLT UCL (Chen-1995)	1.459
		95% Modified-t UCL (Johnson-1978)	1.476

Nonparametric Distribution Free UCLs

95% CLT UCL	1.442	95% Jackknife UCL	1.473
95% Standard Bootstrap UCL	1.422	95% Bootstrap-t UCL	1.486
95% Hall's Bootstrap UCL	1.413	95% Percentile Bootstrap UCL	1.425
95% BCA Bootstrap UCL	1.434		
90% Chebyshev(Mean, Sd) UCL	1.64	95% Chebyshev(Mean, Sd) UCL	1.839
97.5% Chebyshev(Mean, Sd) UCL	2.115	99% Chebyshev(Mean, Sd) UCL	2.658

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.48	Mean	3.031
Maximum	3.225	Median	3.16
SD	0.311	Std. Error of Mean	0.104
Coefficient of Variation	0.103	Skewness	-1.577
Mean of logged Data	1.104	SD of logged Data	0.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.223	95% Adjusted-CLT UCL (Chen-1995)	3.143
		95% Modified-t UCL (Johnson-1978)	3.214

Nonparametric Distribution Free UCLs

95% CLT UCL	3.201	95% Jackknife UCL	3.223
95% Standard Bootstrap UCL	3.191	95% Bootstrap-t UCL	3.167
95% Hall's Bootstrap UCL	3.142	95% Percentile Bootstrap UCL	3.188
95% BCA Bootstrap UCL	3.169		
90% Chebyshev(Mean, Sd) UCL	3.341	95% Chebyshev(Mean, Sd) UCL	3.482
97.5% Chebyshev(Mean, Sd) UCL	3.678	99% Chebyshev(Mean, Sd) UCL	4.062

Suggested UCL to Use

95% Student's-t UCL	3.223	or 95% Modified-t UCL	3.214

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.67	Mean	3.492
Maximum	5.23	Median	3.215
SD	0.75	Std. Error of Mean	0.25
Coefficient of Variation	0.215	Skewness	1.807
Mean of logged Data	1.233	SD of logged Data	0.193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.957	95% Adjusted-CLT UCL (Chen-1995)	4.064
		95% Modified-t UCL (Johnson-1978)	3.982

Nonparametric Distribution Free UCLs

95% CLT UCL	3.903	95% Jackknife UCL	3.957
95% Standard Bootstrap UCL	3.885	95% Bootstrap-t UCL	4.616
95% Hall's Bootstrap UCL	6.452	95% Percentile Bootstrap UCL	3.901
95% BCA Bootstrap UCL	4.097		
90% Chebyshev(Mean, Sd) UCL	4.242	95% Chebyshev(Mean, Sd) UCL	4.582
97.5% Chebyshev(Mean, Sd) UCL	5.053	99% Chebyshev(Mean, Sd) UCL	5.979

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:46:58 AM
From File	40005E_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.8	Mean	12.59
Maximum	14.4	Median	12.9
SD	1.255	Std. Error of Mean	0.418
Coefficient of Variation	0.0997	Skewness	-0.243
Mean of logged Data	2.528	SD of logged Data	0.101

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.37	95% Adjusted-CLT UCL (Chen-1995)	13.24
		95% Modified-t UCL (Johnson-1978)	13.36

Nonparametric Distribution Free UCLs

95% CLT UCL	13.28	95% Jackknife UCL	13.37
95% Standard Bootstrap UCL	13.24	95% Bootstrap-t UCL	13.32
95% Hall's Bootstrap UCL	13.19	95% Percentile Bootstrap UCL	13.26
95% BCA Bootstrap UCL	13.24		
90% Chebyshev(Mean, Sd) UCL	13.84	95% Chebyshev(Mean, Sd) UCL	14.41
97.5% Chebyshev(Mean, Sd) UCL	15.2	99% Chebyshev(Mean, Sd) UCL	16.75

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.2	Mean	10.93
Maximum	11.7	Median	11
SD	0.466	Std. Error of Mean	0.155
Coefficient of Variation	0.0427	Skewness	0.0898

Mean of logged Data	2.391	SD of logged Data	0.0427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.22	95% Adjusted-CLT UCL (Chen-1995)	11.19
		95% Modified-t UCL (Johnson-1978)	11.22

Nonparametric Distribution Free UCLs

95% CLT UCL	11.19	95% Jackknife UCL	11.22
95% Standard Bootstrap UCL	11.17	95% Bootstrap-t UCL	11.24
95% Hall's Bootstrap UCL	11.21	95% Percentile Bootstrap UCL	11.19
95% BCA Bootstrap UCL	11.18		
90% Chebyshev(Mean, Sd) UCL	11.4	95% Chebyshev(Mean, Sd) UCL	11.61
97.5% Chebyshev(Mean, Sd) UCL	11.9	99% Chebyshev(Mean, Sd) UCL	12.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	41.5	Mean	45.8
Maximum	50.8	Median	46.6
SD	3.171	Std. Error of Mean	1.057
Coefficient of Variation	0.0692	Skewness	-0.00369
Mean of logged Data	3.822	SD of logged Data	0.0695

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.77	95% Adjusted-CLT UCL (Chen-1995)	47.54
		95% Modified-t UCL (Johnson-1978)	47.77

Nonparametric Distribution Free UCLs

95% CLT UCL	47.54	95% Jackknife UCL	47.77
95% Standard Bootstrap UCL	47.44	95% Bootstrap-t UCL	47.81
95% Hall's Bootstrap UCL	47.63	95% Percentile Bootstrap UCL	47.52
95% BCA Bootstrap UCL	47.38		
90% Chebyshev(Mean, Sd) UCL	48.97	95% Chebyshev(Mean, Sd) UCL	50.41
97.5% Chebyshev(Mean, Sd) UCL	52.4	99% Chebyshev(Mean, Sd) UCL	56.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.793	Mean	1.225
Maximum	1.59	Median	1.25
SD	0.225	Std. Error of Mean	0.0749
Coefficient of Variation	0.183	Skewness	-0.331
Mean of logged Data	0.187	SD of logged Data	0.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.364	95% Adjusted-CLT UCL (Chen-1995)	1.339
		95% Modified-t UCL (Johnson-1978)	1.363

Nonparametric Distribution Free UCLs

95% CLT UCL	1.348	95% Jackknife UCL	1.364
95% Standard Bootstrap UCL	1.337	95% Bootstrap-t UCL	1.355
95% Hall's Bootstrap UCL	1.368	95% Percentile Bootstrap UCL	1.339
95% BCA Bootstrap UCL	1.328		
90% Chebyshev(Mean, Sd) UCL	1.449	95% Chebyshev(Mean, Sd) UCL	1.551
97.5% Chebyshev(Mean, Sd) UCL	1.692	99% Chebyshev(Mean, Sd) UCL	1.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.391	Mean	0.5
Maximum	0.53	Median	0.515

SD	0.0439	Std. Error of Mean	0.0146
Coefficient of Variation	0.0878	Skewness	-2.366
Mean of logged Data	-0.696	SD of logged Data	0.0963

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.528	95% Adjusted-CLT UCL (Chen-1995)	0.512
		95% Modified-t UCL (Johnson-1978)	0.526

Nonparametric Distribution Free UCLs

95% CLT UCL	0.525	95% Jackknife UCL	0.528
95% Standard Bootstrap UCL	0.523	95% Bootstrap-t UCL	0.519
95% Hall's Bootstrap UCL	0.516	95% Percentile Bootstrap UCL	0.52
95% BCA Bootstrap UCL	0.516		
90% Chebyshev(Mean, Sd) UCL	0.544	95% Chebyshev(Mean, Sd) UCL	0.564
97.5% Chebyshev(Mean, Sd) UCL	0.592	99% Chebyshev(Mean, Sd) UCL	0.646

Suggested UCL to Use

95% Student's-t UCL	0.528	or 95% Modified-t UCL	0.526

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.94	Mean	2.094
Maximum	2.15	Median	2.1
SD	0.0656	Std. Error of Mean	0.0219
Coefficient of Variation	0.0313	Skewness	-1.843
Mean of logged Data	0.739	SD of logged Data	0.0321

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.135	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.133

Nonparametric Distribution Free UCLs

95% CLT UCL	2.13	95% Jackknife UCL	2.135
95% Standard Bootstrap UCL	2.128	95% Bootstrap-t UCL	2.125

95% Hall's Bootstrap UCL	2.121	95% Percentile Bootstrap UCL	2.125
95% BCA Bootstrap UCL	2.12		
90% Chebyshev(Mean, Sd) UCL	2.16	95% Chebyshev(Mean, Sd) UCL	2.19
97.5% Chebyshev(Mean, Sd) UCL	2.231	99% Chebyshev(Mean, Sd) UCL	2.312

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	2.315
Maximum	3.81	Median	2.13
SD	0.575	Std. Error of Mean	0.192
Coefficient of Variation	0.248	Skewness	2.737
Mean of logged Data	0.818	SD of logged Data	0.203

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.671	95% Adjusted-CLT UCL (Chen-1995)	2.817
		95% Modified-t UCL (Johnson-1978)	2.7

Nonparametric Distribution Free UCLs

95% CLT UCL	2.63	95% Jackknife UCL	2.671
95% Standard Bootstrap UCL	2.613	95% Bootstrap-t UCL	4.234
95% Hall's Bootstrap UCL	5.021	95% Percentile Bootstrap UCL	2.669
95% BCA Bootstrap UCL	2.878		
90% Chebyshev(Mean, Sd) UCL	2.89	95% Chebyshev(Mean, Sd) UCL	3.15
97.5% Chebyshev(Mean, Sd) UCL	3.512	99% Chebyshev(Mean, Sd) UCL	4.221

Suggested UCL to Use

95% Student's-t UCL	2.671	or 95% Modified-t UCL	2.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.065	Mean	2.687
Maximum	5.44	Median	2.13
SD	1.204	Std. Error of Mean	0.401
Coefficient of Variation	0.448	Skewness	1.995
Mean of logged Data	0.922	SD of logged Data	0.358

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.433	95% Adjusted-CLT UCL (Chen-1995)	3.632
		95% Modified-t UCL (Johnson-1978)	3.478

Nonparametric Distribution Free UCLs

95% CLT UCL	3.347	95% Jackknife UCL	3.433
95% Standard Bootstrap UCL	3.304	95% Bootstrap-t UCL	25.46
95% Hall's Bootstrap UCL	13.82	95% Percentile Bootstrap UCL	3.421
95% BCA Bootstrap UCL	3.591		
90% Chebyshev(Mean, Sd) UCL	3.891	95% Chebyshev(Mean, Sd) UCL	4.436
97.5% Chebyshev(Mean, Sd) UCL	5.193	99% Chebyshev(Mean, Sd) UCL	6.68

Suggested UCL to Use

95% Student's-t UCL	3.433	or 95% Modified-t UCL	3.478

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.18	Mean	4.142
Maximum	7.65	Median	3.305
SD	1.539	Std. Error of Mean	0.513
Coefficient of Variation	0.372	Skewness	1.8
Mean of logged Data	1.372	SD of logged Data	0.315

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.096	95% Adjusted-CLT UCL (Chen-1995)	5.315
		95% Modified-t UCL (Johnson-1978)	5.147

Nonparametric Distribution Free UCLs

95% CLT UCL	4.986	95% Jackknife UCL	5.096
95% Standard Bootstrap UCL	4.943	95% Bootstrap-t UCL	6.286
95% Hall's Bootstrap UCL	5.605	95% Percentile Bootstrap UCL	5.027

95% BCA Bootstrap UCL	5.344		
90% Chebyshev(Mean, Sd) UCL	5.681	95% Chebyshev(Mean, Sd) UCL	6.378
97.5% Chebyshev(Mean, Sd) UCL	7.346	99% Chebyshev(Mean, Sd) UCL	9.247

Suggested UCL to Use

95% Student's-t UCL	5.096	or 95% Modified-t UCL	5.147

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.51	Mean	3.156
Maximum	3.85	Median	3.225
SD	0.408	Std. Error of Mean	0.136
Coefficient of Variation	0.129	Skewness	-0.352
Mean of logged Data	1.142	SD of logged Data	0.134

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.409	95% Adjusted-CLT UCL (Chen-1995)	3.363
		95% Modified-t UCL (Johnson-1978)	3.407

Nonparametric Distribution Free UCLs

95% CLT UCL	3.38	95% Jackknife UCL	3.409
95% Standard Bootstrap UCL	3.368	95% Bootstrap-t UCL	3.376
95% Hall's Bootstrap UCL	3.38	95% Percentile Bootstrap UCL	3.366
95% BCA Bootstrap UCL	3.335		
90% Chebyshev(Mean, Sd) UCL	3.564	95% Chebyshev(Mean, Sd) UCL	3.749
97.5% Chebyshev(Mean, Sd) UCL	4.006	99% Chebyshev(Mean, Sd) UCL	4.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.065	Mean	2.203

Maximum	2.96	Median	2.1
SD	0.285	Std. Error of Mean	0.0951
Coefficient of Variation	0.13	Skewness	2.942
Mean of logged Data	0.783	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.38	95% Adjusted-CLT UCL (Chen-1995)	2.459
		95% Modified-t UCL (Johnson-1978)	2.395

Nonparametric Distribution Free UCLs

95% CLT UCL	2.359	95% Jackknife UCL	2.38
95% Standard Bootstrap UCL	2.354	95% Bootstrap-t UCL	3.401
95% Hall's Bootstrap UCL	3.163	95% Percentile Bootstrap UCL	2.388
95% BCA Bootstrap UCL	2.487		
90% Chebyshev(Mean, Sd) UCL	2.488	95% Chebyshev(Mean, Sd) UCL	2.617
97.5% Chebyshev(Mean, Sd) UCL	2.797	99% Chebyshev(Mean, Sd) UCL	3.149

Suggested UCL to Use

95% Student's-t UCL	2.38	or 95% Modified-t UCL	2.395

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.065	Mean	2.838
Maximum	5.52	Median	2.145
SD	1.224	Std. Error of Mean	0.408
Coefficient of Variation	0.431	Skewness	1.634
Mean of logged Data	0.977	SD of logged Data	0.367

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.597	95% Adjusted-CLT UCL (Chen-1995)	3.747
		95% Modified-t UCL (Johnson-1978)	3.634

Nonparametric Distribution Free UCLs

95% CLT UCL	3.509	95% Jackknife UCL	3.597
95% Standard Bootstrap UCL	3.472	95% Bootstrap-t UCL	4.537
95% Hall's Bootstrap UCL	3.629	95% Percentile Bootstrap UCL	3.523
95% BCA Bootstrap UCL	3.746		

90% Chebyshev(Mean, Sd) UCL	4.062	95% Chebyshev(Mean, Sd) UCL	4.617
97.5% Chebyshev(Mean, Sd) UCL	5.386	99% Chebyshev(Mean, Sd) UCL	6.897

Suggested UCL to Use

95% Student's-t UCL	3.597	or 95% Modified-t UCL	3.634

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.985	Mean	3.223
Maximum	3.31	Median	3.23
SD	0.101	Std. Error of Mean	0.0337
Coefficient of Variation	0.0314	Skewness	-1.835
Mean of logged Data	1.17	SD of logged Data	0.0322

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.286	95% Adjusted-CLT UCL (Chen-1995)	3.257
		95% Modified-t UCL (Johnson-1978)	3.283

Nonparametric Distribution Free UCLs

95% CLT UCL	3.279	95% Jackknife UCL	3.286
95% Standard Bootstrap UCL	3.276	95% Bootstrap-t UCL	3.269
95% Hall's Bootstrap UCL	3.262	95% Percentile Bootstrap UCL	3.271
95% BCA Bootstrap UCL	3.259		
90% Chebyshev(Mean, Sd) UCL	3.325	95% Chebyshev(Mean, Sd) UCL	3.37
97.5% Chebyshev(Mean, Sd) UCL	3.434	99% Chebyshev(Mean, Sd) UCL	3.559

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.065	Mean	3.652
Maximum	9.08	Median	2.145

SD	2.466	Std. Error of Mean	0.822
Coefficient of Variation	0.675	Skewness	1.653
Mean of logged Data	1.137	SD of logged Data	0.56

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.18	95% Adjusted-CLT UCL (Chen-1995)	5.488
		95% Modified-t UCL (Johnson-1978)	5.256

Nonparametric Distribution Free UCLs

95% CLT UCL	5.004	95% Jackknife UCL	5.18
95% Standard Bootstrap UCL	4.932	95% Bootstrap-t UCL	7.118
95% Hall's Bootstrap UCL	5.748	95% Percentile Bootstrap UCL	4.971
95% BCA Bootstrap UCL	5.367		
90% Chebyshev(Mean, Sd) UCL	6.118	95% Chebyshev(Mean, Sd) UCL	7.235
97.5% Chebyshev(Mean, Sd) UCL	8.785	99% Chebyshev(Mean, Sd) UCL	11.83

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.235

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.195	Mean	1.289
Maximum	1.325	Median	1.295
SD	0.0403	Std. Error of Mean	0.0134
Coefficient of Variation	0.0312	Skewness	-1.821
Mean of logged Data	0.254	SD of logged Data	0.032

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.314	95% Adjusted-CLT UCL (Chen-1995)	1.303
		95% Modified-t UCL (Johnson-1978)	1.313

Nonparametric Distribution Free UCLs

95% CLT UCL	1.312	95% Jackknife UCL	1.314
95% Standard Bootstrap UCL	1.31	95% Bootstrap-t UCL	1.307
95% Hall's Bootstrap UCL	1.305	95% Percentile Bootstrap UCL	1.308
95% BCA Bootstrap UCL	1.305		
90% Chebyshev(Mean, Sd) UCL	1.33	95% Chebyshev(Mean, Sd) UCL	1.348

97.5% Chebyshev(Mean, Sd) UCL	1.373	99% Chebyshev(Mean, Sd) UCL	1.423

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.59	Mean	3.28
Maximum	4.46	Median	3.225
SD	0.499	Std. Error of Mean	0.166
Coefficient of Variation	0.152	Skewness	1.655
Mean of logged Data	1.178	SD of logged Data	0.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.589	95% Adjusted-CLT UCL (Chen-1995)	3.652
		95% Modified-t UCL (Johnson-1978)	3.605

Nonparametric Distribution Free UCLs

95% CLT UCL	3.554	95% Jackknife UCL	3.589
95% Standard Bootstrap UCL	3.545	95% Bootstrap-t UCL	3.716
95% Hall's Bootstrap UCL	5.057	95% Percentile Bootstrap UCL	3.554
95% BCA Bootstrap UCL	3.638		
90% Chebyshev(Mean, Sd) UCL	3.779	95% Chebyshev(Mean, Sd) UCL	4.005
97.5% Chebyshev(Mean, Sd) UCL	4.319	99% Chebyshev(Mean, Sd) UCL	4.935

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.37	Mean	2.141
Maximum	2.72	Median	2.14
SD	0.4	Std. Error of Mean	0.133

Coefficient of Variation	0.187	Skewness	-0.626
Mean of logged Data	0.744	SD of logged Data	0.203

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.389	95% Adjusted-CLT UCL (Chen-1995)	2.331
		95% Modified-t UCL (Johnson-1978)	2.385

Nonparametric Distribution Free UCLs

95% CLT UCL	2.361	95% Jackknife UCL	2.389
95% Standard Bootstrap UCL	2.353	95% Bootstrap-t UCL	2.363
95% Hall's Bootstrap UCL	2.348	95% Percentile Bootstrap UCL	2.331
95% BCA Bootstrap UCL	2.322		
90% Chebyshev(Mean, Sd) UCL	2.541	95% Chebyshev(Mean, Sd) UCL	2.723
97.5% Chebyshev(Mean, Sd) UCL	2.974	99% Chebyshev(Mean, Sd) UCL	3.469

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.43	Mean	3.623
Maximum	7.08	Median	3.225
SD	1.408	Std. Error of Mean	0.469
Coefficient of Variation	0.389	Skewness	2.215
Mean of logged Data	1.236	SD of logged Data	0.318

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.496	95% Adjusted-CLT UCL (Chen-1995)	4.765
		95% Modified-t UCL (Johnson-1978)	4.553

Nonparametric Distribution Free UCLs

95% CLT UCL	4.395	95% Jackknife UCL	4.496
95% Standard Bootstrap UCL	4.335	95% Bootstrap-t UCL	6.103
95% Hall's Bootstrap UCL	8.9	95% Percentile Bootstrap UCL	4.452

95% BCA Bootstrap UCL	4.762		
90% Chebyshev(Mean, Sd) UCL	5.031	95% Chebyshev(Mean, Sd) UCL	5.669
97.5% Chebyshev(Mean, Sd) UCL	6.554	99% Chebyshev(Mean, Sd) UCL	8.293

Suggested UCL to Use

95% Student's-t UCL	4.496	or 95% Modified-t UCL	4.553

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.18	Mean	4.093
Maximum	7.76	Median	3.305
SD	1.557	Std. Error of Mean	0.519
Coefficient of Variation	0.381	Skewness	2.034
Mean of logged Data	1.36	SD of logged Data	0.313

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.058	95% Adjusted-CLT UCL (Chen-1995)	5.323
		95% Modified-t UCL (Johnson-1978)	5.117

Nonparametric Distribution Free UCLs

95% CLT UCL	4.947	95% Jackknife UCL	5.058
95% Standard Bootstrap UCL	4.877	95% Bootstrap-t UCL	7.676
95% Hall's Bootstrap UCL	8.567	95% Percentile Bootstrap UCL	4.984
95% BCA Bootstrap UCL	5.329		
90% Chebyshev(Mean, Sd) UCL	5.65	95% Chebyshev(Mean, Sd) UCL	6.356
97.5% Chebyshev(Mean, Sd) UCL	7.335	99% Chebyshev(Mean, Sd) UCL	9.258

Suggested UCL to Use

95% Student's-t UCL	5.058	or 95% Modified-t UCL	5.117

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:48:02 AM
From File	40005F_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.1	Mean	12.27
Maximum	13.8	Median	13.1
SD	1.607	Std. Error of Mean	0.536
Coefficient of Variation	0.131	Skewness	-0.721
Mean of logged Data	2.499	SD of logged Data	0.137

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.26	95% Adjusted-CLT UCL (Chen-1995)	13.01
		95% Modified-t UCL (Johnson-1978)	13.24

Nonparametric Distribution Free UCLs

95% CLT UCL	13.15	95% Jackknife UCL	13.26
95% Standard Bootstrap UCL	13.1	95% Bootstrap-t UCL	13.14
95% Hall's Bootstrap UCL	12.92	95% Percentile Bootstrap UCL	13.06
95% BCA Bootstrap UCL	13.01		
90% Chebyshev(Mean, Sd) UCL	13.87	95% Chebyshev(Mean, Sd) UCL	14.6
97.5% Chebyshev(Mean, Sd) UCL	15.61	99% Chebyshev(Mean, Sd) UCL	17.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.5	Mean	10.89
Maximum	11.4	Median	11
SD	0.341	Std. Error of Mean	0.114
Coefficient of Variation	0.0313	Skewness	0.122

Mean of logged Data	2.387	SD of logged Data	0.0313

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.1	95% Adjusted-CLT UCL (Chen-1995)	11.08
		95% Modified-t UCL (Johnson-1978)	11.1

Nonparametric Distribution Free UCLs

95% CLT UCL	11.08	95% Jackknife UCL	11.1
95% Standard Bootstrap UCL	11.07	95% Bootstrap-t UCL	11.1
95% Hall's Bootstrap UCL	11.07	95% Percentile Bootstrap UCL	11.07
95% BCA Bootstrap UCL	11.07		
90% Chebyshev(Mean, Sd) UCL	11.23	95% Chebyshev(Mean, Sd) UCL	11.38
97.5% Chebyshev(Mean, Sd) UCL	11.6	99% Chebyshev(Mean, Sd) UCL	12.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	39.2	Mean	44.43
Maximum	48.1	Median	45.4
SD	3.346	Std. Error of Mean	1.115
Coefficient of Variation	0.0753	Skewness	-0.595
Mean of logged Data	3.791	SD of logged Data	0.0768

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.51	95% Adjusted-CLT UCL (Chen-1995)	46.03
		95% Modified-t UCL (Johnson-1978)	46.47

Nonparametric Distribution Free UCLs

95% CLT UCL	46.27	95% Jackknife UCL	46.51
95% Standard Bootstrap UCL	46.16	95% Bootstrap-t UCL	46.23
95% Hall's Bootstrap UCL	45.85	95% Percentile Bootstrap UCL	46.18
95% BCA Bootstrap UCL	46.04		
90% Chebyshev(Mean, Sd) UCL	47.78	95% Chebyshev(Mean, Sd) UCL	49.29
97.5% Chebyshev(Mean, Sd) UCL	51.4	99% Chebyshev(Mean, Sd) UCL	55.53

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.746	Mean	1.059
Maximum	1.75	Median	0.969
SD	0.309	Std. Error of Mean	0.103
Coefficient of Variation	0.292	Skewness	1.497
Mean of logged Data	0.0245	SD of logged Data	0.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.251	95% Adjusted-CLT UCL (Chen-1995)	1.283
		95% Modified-t UCL (Johnson-1978)	1.259

Nonparametric Distribution Free UCLs

95% CLT UCL	1.229	95% Jackknife UCL	1.251
95% Standard Bootstrap UCL	1.221	95% Bootstrap-t UCL	1.366
95% Hall's Bootstrap UCL	1.948	95% Percentile Bootstrap UCL	1.228
95% BCA Bootstrap UCL	1.251		
90% Chebyshev(Mean, Sd) UCL	1.368	95% Chebyshev(Mean, Sd) UCL	1.508
97.5% Chebyshev(Mean, Sd) UCL	1.702	99% Chebyshev(Mean, Sd) UCL	2.084

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.488	Mean	0.522
Maximum	0.535	Median	0.525
SD	0.014	Std. Error of Mean	0.00467
Coefficient of Variation	0.0269	Skewness	-2.206
Mean of logged Data	-0.651	SD of logged Data	0.0275

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.531	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.53

Nonparametric Distribution Free UCLs

95% CLT UCL	0.53	95% Jackknife UCL	0.531
95% Standard Bootstrap UCL	0.529	95% Bootstrap-t UCL	0.528
95% Hall's Bootstrap UCL	0.527	95% Percentile Bootstrap UCL	0.528
95% BCA Bootstrap UCL	0.527		
90% Chebyshev(Mean, Sd) UCL	0.536	95% Chebyshev(Mean, Sd) UCL	0.542
97.5% Chebyshev(Mean, Sd) UCL	0.551	99% Chebyshev(Mean, Sd) UCL	0.568

Suggested UCL to Use

95% Student's-t UCL	0.531	or 95% Modified-t UCL	0.53

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.98	Mean	2.118
Maximum	2.165	Median	2.135
SD	0.0572	Std. Error of Mean	0.0191
Coefficient of Variation	0.027	Skewness	-2.108
Mean of logged Data	0.75	SD of logged Data	0.0276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.154	95% Adjusted-CLT UCL (Chen-1995)	2.135
		95% Modified-t UCL (Johnson-1978)	2.152

Nonparametric Distribution Free UCLs

95% CLT UCL	2.15	95% Jackknife UCL	2.154
95% Standard Bootstrap UCL	2.149	95% Bootstrap-t UCL	2.143
95% Hall's Bootstrap UCL	2.139	95% Percentile Bootstrap UCL	2.144
95% BCA Bootstrap UCL	2.14		
90% Chebyshev(Mean, Sd) UCL	2.176	95% Chebyshev(Mean, Sd) UCL	2.201

97.5% Chebyshev(Mean, Sd) UCL	2.237	99% Chebyshev(Mean, Sd) UCL	2.308

Suggested UCL to Use

95% Student's-t UCL	2.154	or 95% Modified-t UCL	2.152

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.125	Mean	2.388
Maximum	4.05	Median	2.155
SD	0.63	Std. Error of Mean	0.21
Coefficient of Variation	0.264	Skewness	2.888
Mean of logged Data	0.848	SD of logged Data	0.211

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.779	95% Adjusted-CLT UCL (Chen-1995)	2.95
		95% Modified-t UCL (Johnson-1978)	2.812

Nonparametric Distribution Free UCLs

95% CLT UCL	2.734	95% Jackknife UCL	2.779
95% Standard Bootstrap UCL	2.708	95% Bootstrap-t UCL	13.54
95% Hall's Bootstrap UCL	7.224	95% Percentile Bootstrap UCL	2.783
95% BCA Bootstrap UCL	2.994		
90% Chebyshev(Mean, Sd) UCL	3.018	95% Chebyshev(Mean, Sd) UCL	3.303
97.5% Chebyshev(Mean, Sd) UCL	3.699	99% Chebyshev(Mean, Sd) UCL	4.477

Suggested UCL to Use

95% Student's-t UCL	2.779	or 95% Modified-t UCL	2.812

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.125	Mean	2.903
Maximum	5.78	Median	2.16
SD	1.28	Std. Error of Mean	0.427

Coefficient of Variation	0.441	Skewness	1.715
Mean of logged Data	0.997	SD of logged Data	0.372

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.696	95% Adjusted-CLT UCL (Chen-1995)	3.865
		95% Modified-t UCL (Johnson-1978)	3.737

Nonparametric Distribution Free UCLs

95% CLT UCL	3.605	95% Jackknife UCL	3.696
95% Standard Bootstrap UCL	3.57	95% Bootstrap-t UCL	4.391
95% Hall's Bootstrap UCL	3.679	95% Percentile Bootstrap UCL	3.659
95% BCA Bootstrap UCL	3.864		
90% Chebyshev(Mean, Sd) UCL	4.183	95% Chebyshev(Mean, Sd) UCL	4.763
97.5% Chebyshev(Mean, Sd) UCL	5.568	99% Chebyshev(Mean, Sd) UCL	7.149

Suggested UCL to Use

95% Student's-t UCL	3.696	or 95% Modified-t UCL	3.737

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.265	Mean	4.362
Maximum	8.53	Median	3.32
SD	1.825	Std. Error of Mean	0.608
Coefficient of Variation	0.418	Skewness	1.801
Mean of logged Data	1.411	SD of logged Data	0.351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.493	95% Adjusted-CLT UCL (Chen-1995)	5.753
		95% Modified-t UCL (Johnson-1978)	5.554

Nonparametric Distribution Free UCLs

95% CLT UCL	5.363	95% Jackknife UCL	5.493
95% Standard Bootstrap UCL	5.31	95% Bootstrap-t UCL	6.669
95% Hall's Bootstrap UCL	5.785	95% Percentile Bootstrap UCL	5.325
95% BCA Bootstrap UCL	5.738		
90% Chebyshev(Mean, Sd) UCL	6.187	95% Chebyshev(Mean, Sd) UCL	7.013
97.5% Chebyshev(Mean, Sd) UCL	8.161	99% Chebyshev(Mean, Sd) UCL	10.41

Suggested UCL to Use

95% Student's-t UCL	5.493	or 95% Modified-t UCL	5.554

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.55	Mean	3.202
Maximum	3.91	Median	3.285
SD	0.418	Std. Error of Mean	0.139
Coefficient of Variation	0.131	Skewness	-0.398
Mean of logged Data	1.156	SD of logged Data	0.136

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.461	95% Adjusted-CLT UCL (Chen-1995)	3.412
		95% Modified-t UCL (Johnson-1978)	3.458

Nonparametric Distribution Free UCLs

95% CLT UCL	3.432	95% Jackknife UCL	3.461
95% Standard Bootstrap UCL	3.417	95% Bootstrap-t UCL	3.444
95% Hall's Bootstrap UCL	3.439	95% Percentile Bootstrap UCL	3.427
95% BCA Bootstrap UCL	3.376		
90% Chebyshev(Mean, Sd) UCL	3.62	95% Chebyshev(Mean, Sd) UCL	3.81
97.5% Chebyshev(Mean, Sd) UCL	4.073	99% Chebyshev(Mean, Sd) UCL	4.589

Suggested UCL to Use

95% Student's-t UCL	3.461	or 95% Modified-t UCL	3.458

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.08	Mean	2.247
Maximum	3.18	Median	2.135
SD	0.351	Std. Error of Mean	0.117
Coefficient of Variation	0.156	Skewness	2.957

Mean of logged Data	0.801	SD of logged Data	0.134

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.464	95% Adjusted-CLT UCL (Chen-1995)	2.563
		95% Modified-t UCL (Johnson-1978)	2.484

Nonparametric Distribution Free UCLs

95% CLT UCL	2.439	95% Jackknife UCL	2.464
95% Standard Bootstrap UCL	2.426	95% Bootstrap-t UCL	3.896
95% Hall's Bootstrap UCL	3.963	95% Percentile Bootstrap UCL	2.478
95% BCA Bootstrap UCL	2.598		
90% Chebyshev(Mean, Sd) UCL	2.598	95% Chebyshev(Mean, Sd) UCL	2.757
97.5% Chebyshev(Mean, Sd) UCL	2.978	99% Chebyshev(Mean, Sd) UCL	3.412

Suggested UCL to Use

95% Student's-t UCL	2.464	or 95% Modified-t UCL	2.484

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.125	Mean	2.944
Maximum	5.85	Median	2.16
SD	1.33	Std. Error of Mean	0.443
Coefficient of Variation	0.452	Skewness	1.603
Mean of logged Data	1.006	SD of logged Data	0.384

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.768	95% Adjusted-CLT UCL (Chen-1995)	3.926
		95% Modified-t UCL (Johnson-1978)	3.807

Nonparametric Distribution Free UCLs

95% CLT UCL	3.673	95% Jackknife UCL	3.768
95% Standard Bootstrap UCL	3.64	95% Bootstrap-t UCL	4.601
95% Hall's Bootstrap UCL	3.85	95% Percentile Bootstrap UCL	3.72
95% BCA Bootstrap UCL	3.718		
90% Chebyshev(Mean, Sd) UCL	4.273	95% Chebyshev(Mean, Sd) UCL	4.876
97.5% Chebyshev(Mean, Sd) UCL	5.711	99% Chebyshev(Mean, Sd) UCL	7.353

Suggested UCL to Use

95% Student's-t UCL	3.768	or 95% Modified-t UCL	3.807

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.045	Mean	3.257
Maximum	3.33	Median	3.285
SD	0.088	Std. Error of Mean	0.0293
Coefficient of Variation	0.027	Skewness	-2.08
Mean of logged Data	1.181	SD of logged Data	0.0277

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.312	95% Adjusted-CLT UCL (Chen-1995)	3.284
		95% Modified-t UCL (Johnson-1978)	3.308

Nonparametric Distribution Free UCLs

95% CLT UCL	3.305	95% Jackknife UCL	3.312
95% Standard Bootstrap UCL	3.304	95% Bootstrap-t UCL	3.296
95% Hall's Bootstrap UCL	3.289	95% Percentile Bootstrap UCL	3.298
95% BCA Bootstrap UCL	3.289		
90% Chebyshev(Mean, Sd) UCL	3.345	95% Chebyshev(Mean, Sd) UCL	3.385
97.5% Chebyshev(Mean, Sd) UCL	3.44	99% Chebyshev(Mean, Sd) UCL	3.549

Suggested UCL to Use

95% Student's-t UCL	3.312	or 95% Modified-t UCL	3.308

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.125	Mean	3.866
Maximum	9.71	Median	2.16
SD	2.75	Std. Error of Mean	0.917
Coefficient of Variation	0.711	Skewness	1.476
Mean of logged Data	1.17	SD of logged Data	0.604

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.57	95% Adjusted-CLT UCL (Chen-1995)	5.855
		95% Modified-t UCL (Johnson-1978)	5.645

Nonparametric Distribution Free UCLs

95% CLT UCL	5.373	95% Jackknife UCL	5.57
95% Standard Bootstrap UCL	5.261	95% Bootstrap-t UCL	6.838
95% Hall's Bootstrap UCL	5.319	95% Percentile Bootstrap UCL	5.222
95% BCA Bootstrap UCL	5.627		
90% Chebyshev(Mean, Sd) UCL	6.616	95% Chebyshev(Mean, Sd) UCL	7.861
97.5% Chebyshev(Mean, Sd) UCL	9.59	99% Chebyshev(Mean, Sd) UCL	12.99

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.861

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.22	Mean	1.303
Maximum	1.33	Median	1.315
SD	0.0347	Std. Error of Mean	0.0116
Coefficient of Variation	0.0267	Skewness	-2.009
Mean of logged Data	0.264	SD of logged Data	0.0273

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.324	95% Adjusted-CLT UCL (Chen-1995)	1.314
		95% Modified-t UCL (Johnson-1978)	1.323

Nonparametric Distribution Free UCLs

95% CLT UCL	1.322	95% Jackknife UCL	1.324
95% Standard Bootstrap UCL	1.321	95% Bootstrap-t UCL	1.318
95% Hall's Bootstrap UCL	1.316	95% Percentile Bootstrap UCL	1.319
95% BCA Bootstrap UCL	1.316		
90% Chebyshev(Mean, Sd) UCL	1.338	95% Chebyshev(Mean, Sd) UCL	1.353
97.5% Chebyshev(Mean, Sd) UCL	1.375	99% Chebyshev(Mean, Sd) UCL	1.418

Suggested UCL to Use

95% Student's-t UCL	1.324	or 95% Modified-t UCL	1.323

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.92	Mean	3.384
Maximum	4.76	Median	3.285
SD	0.538	Std. Error of Mean	0.179
Coefficient of Variation	0.159	Skewness	2.507
Mean of logged Data	1.21	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.718	95% Adjusted-CLT UCL (Chen-1995)	3.84
		95% Modified-t UCL (Johnson-1978)	3.743

Nonparametric Distribution Free UCLs

95% CLT UCL	3.68	95% Jackknife UCL	3.718
95% Standard Bootstrap UCL	3.663	95% Bootstrap-t UCL	4.105
95% Hall's Bootstrap UCL	5.151	95% Percentile Bootstrap UCL	3.709
95% BCA Bootstrap UCL	3.867		
90% Chebyshev(Mean, Sd) UCL	3.923	95% Chebyshev(Mean, Sd) UCL	4.166
97.5% Chebyshev(Mean, Sd) UCL	4.505	99% Chebyshev(Mean, Sd) UCL	5.17

Suggested UCL to Use

95% Student's-t UCL	3.718	or 95% Modified-t UCL	3.743

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.46	Mean	2.046
Maximum	4.01	Median	1.88
SD	0.796	Std. Error of Mean	0.265
Coefficient of Variation	0.389	Skewness	2.251
Mean of logged Data	0.665	SD of logged Data	0.316

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.539	95% Adjusted-CLT UCL (Chen-1995)	2.694
		95% Modified-t UCL (Johnson-1978)	2.572

Nonparametric Distribution Free UCLs

95% CLT UCL	2.482	95% Jackknife UCL	2.539
95% Standard Bootstrap UCL	2.461	95% Bootstrap-t UCL	3.194
95% Hall's Bootstrap UCL	4.28	95% Percentile Bootstrap UCL	2.507
95% BCA Bootstrap UCL	2.712		
90% Chebyshev(Mean, Sd) UCL	2.841	95% Chebyshev(Mean, Sd) UCL	3.202
97.5% Chebyshev(Mean, Sd) UCL	3.702	99% Chebyshev(Mean, Sd) UCL	4.685

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.46	Mean	3.243
Maximum	4.4	Median	3.285
SD	0.557	Std. Error of Mean	0.186
Coefficient of Variation	0.172	Skewness	0.656
Mean of logged Data	1.164	SD of logged Data	0.17

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.589	95% Adjusted-CLT UCL (Chen-1995)	3.592
		95% Modified-t UCL (Johnson-1978)	3.595

Nonparametric Distribution Free UCLs

95% CLT UCL	3.549	95% Jackknife UCL	3.589
95% Standard Bootstrap UCL	3.537	95% Bootstrap-t UCL	3.631
95% Hall's Bootstrap UCL	3.765	95% Percentile Bootstrap UCL	3.545
95% BCA Bootstrap UCL	3.587		
90% Chebyshev(Mean, Sd) UCL	3.8	95% Chebyshev(Mean, Sd) UCL	4.053
97.5% Chebyshev(Mean, Sd) UCL	4.403	99% Chebyshev(Mean, Sd) UCL	5.091

Suggested UCL to Use

95% Student's-t UCL	3.589	or 95% Modified-t UCL	3.595

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.265	Mean	4.376
Maximum	8.64	Median	3.32
SD	1.861	Std. Error of Mean	0.62
Coefficient of Variation	0.425	Skewness	1.827
Mean of logged Data	1.413	SD of logged Data	0.355

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.529	95% Adjusted-CLT UCL (Chen-1995)	5.8
		95% Modified-t UCL (Johnson-1978)	5.592

Nonparametric Distribution Free UCLs

95% CLT UCL	5.396	95% Jackknife UCL	5.529
95% Standard Bootstrap UCL	5.351	95% Bootstrap-t UCL	6.976
95% Hall's Bootstrap UCL	6.187	95% Percentile Bootstrap UCL	5.411
95% BCA Bootstrap UCL	5.879		
90% Chebyshev(Mean, Sd) UCL	6.237	95% Chebyshev(Mean, Sd) UCL	7.08
97.5% Chebyshev(Mean, Sd) UCL	8.25	99% Chebyshev(Mean, Sd) UCL	10.55

Suggested UCL to Use

95% Student's-t UCL	5.529	or 95% Modified-t UCL	5.592

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:10:59 AM
From File	40005G_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	8.43	Mean	11.09
Maximum	12.9	Median	11.8
SD	1.774	Std. Error of Mean	0.591
Coefficient of Variation	0.16	Skewness	-0.489
Mean of logged Data	2.394	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.19	95% Adjusted-CLT UCL (Chen-1995)	11.96
		95% Modified-t UCL (Johnson-1978)	12.18

Nonparametric Distribution Free UCLs

95% CLT UCL	12.07	95% Jackknife UCL	12.19
95% Standard Bootstrap UCL	12.05	95% Bootstrap-t UCL	12.11
95% Hall's Bootstrap UCL	11.86	95% Percentile Bootstrap UCL	11.99
95% BCA Bootstrap UCL	11.96		
90% Chebyshev(Mean, Sd) UCL	12.87	95% Chebyshev(Mean, Sd) UCL	13.67
97.5% Chebyshev(Mean, Sd) UCL	14.79	99% Chebyshev(Mean, Sd) UCL	16.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.59	Mean	10.39
Maximum	12.7	Median	10.1
SD	0.924	Std. Error of Mean	0.308
Coefficient of Variation	0.089	Skewness	2.337

Mean of logged Data	2.337	SD of logged Data	0.0828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.96	95% Adjusted-CLT UCL (Chen-1995)	11.15
		95% Modified-t UCL (Johnson-1978)	11

Nonparametric Distribution Free UCLs

95% CLT UCL	10.89	95% Jackknife UCL	10.96
95% Standard Bootstrap UCL	10.88	95% Bootstrap-t UCL	11.68
95% Hall's Bootstrap UCL	12.99	95% Percentile Bootstrap UCL	10.91
95% BCA Bootstrap UCL	11.08		
90% Chebyshev(Mean, Sd) UCL	11.31	95% Chebyshev(Mean, Sd) UCL	11.73
97.5% Chebyshev(Mean, Sd) UCL	12.31	99% Chebyshev(Mean, Sd) UCL	13.45

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	34	Mean	39.81
Maximum	43.8	Median	41.2
SD	3.782	Std. Error of Mean	1.261
Coefficient of Variation	0.095	Skewness	-0.506
Mean of logged Data	3.68	SD of logged Data	0.0973

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.16	95% Adjusted-CLT UCL (Chen-1995)	41.66
		95% Modified-t UCL (Johnson-1978)	42.12

Nonparametric Distribution Free UCLs

95% CLT UCL	41.88	95% Jackknife UCL	42.16
95% Standard Bootstrap UCL	41.73	95% Bootstrap-t UCL	41.92
95% Hall's Bootstrap UCL	41.48	95% Percentile Bootstrap UCL	41.79
95% BCA Bootstrap UCL	41.64		
90% Chebyshev(Mean, Sd) UCL	43.59	95% Chebyshev(Mean, Sd) UCL	45.31
97.5% Chebyshev(Mean, Sd) UCL	47.68	99% Chebyshev(Mean, Sd) UCL	52.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.871	Mean	1.311
Maximum	1.99	Median	1.02
SD	0.492	Std. Error of Mean	0.164
Coefficient of Variation	0.376	Skewness	0.757
Mean of logged Data	0.212	SD of logged Data	0.354

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.616	95% Adjusted-CLT UCL (Chen-1995)	1.625
		95% Modified-t UCL (Johnson-1978)	1.623

Nonparametric Distribution Free UCLs

95% CLT UCL	1.581	95% Jackknife UCL	1.616
95% Standard Bootstrap UCL	1.567	95% Bootstrap-t UCL	1.658
95% Hall's Bootstrap UCL	1.487	95% Percentile Bootstrap UCL	1.572
95% BCA Bootstrap UCL	1.592		
90% Chebyshev(Mean, Sd) UCL	1.803	95% Chebyshev(Mean, Sd) UCL	2.026
97.5% Chebyshev(Mean, Sd) UCL	2.336	99% Chebyshev(Mean, Sd) UCL	2.944

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.497	Mean	0.519
Maximum	0.53	Median	0.525
SD	0.0123	Std. Error of Mean	0.0041
Coefficient of Variation	0.0237	Skewness	-0.704
Mean of logged Data	-0.657	SD of logged Data	0.0239

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.526	95% Adjusted-CLT UCL (Chen-1995)	0.524
		95% Modified-t UCL (Johnson-1978)	0.526

Nonparametric Distribution Free UCLs

95% CLT UCL	0.525	95% Jackknife UCL	0.526
95% Standard Bootstrap UCL	0.525	95% Bootstrap-t UCL	0.525
95% Hall's Bootstrap UCL	0.524	95% Percentile Bootstrap UCL	0.525
95% BCA Bootstrap UCL	0.524		
90% Chebyshev(Mean, Sd) UCL	0.531	95% Chebyshev(Mean, Sd) UCL	0.536
97.5% Chebyshev(Mean, Sd) UCL	0.544	99% Chebyshev(Mean, Sd) UCL	0.559

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.57	Mean	2.058
Maximum	2.16	Median	2.125
SD	0.187	Std. Error of Mean	0.0623
Coefficient of Variation	0.0908	Skewness	-2.778
Mean of logged Data	0.718	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.174	95% Adjusted-CLT UCL (Chen-1995)	2.099
		95% Modified-t UCL (Johnson-1978)	2.165

Nonparametric Distribution Free UCLs

95% CLT UCL	2.161	95% Jackknife UCL	2.174
95% Standard Bootstrap UCL	2.155	95% Bootstrap-t UCL	2.135
95% Hall's Bootstrap UCL	2.119	95% Percentile Bootstrap UCL	2.132
95% BCA Bootstrap UCL	2.126		
90% Chebyshev(Mean, Sd) UCL	2.245	95% Chebyshev(Mean, Sd) UCL	2.33

97.5% Chebyshev(Mean, Sd) UCL	2.447	99% Chebyshev(Mean, Sd) UCL	2.678

Suggested UCL to Use

95% Student's-t UCL	2.174	or 95% Modified-t UCL	2.165

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	4.456
Maximum	13.3	Median	3.69
SD	3.569	Std. Error of Mean	1.19
Coefficient of Variation	0.801	Skewness	2.309
Mean of logged Data	1.301	SD of logged Data	0.604

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.668	95% Adjusted-CLT UCL (Chen-1995)	7.392
		95% Modified-t UCL (Johnson-1978)	6.821

Nonparametric Distribution Free UCLs

95% CLT UCL	6.413	95% Jackknife UCL	6.668
95% Standard Bootstrap UCL	6.257	95% Bootstrap-t UCL	11.01
95% Hall's Bootstrap UCL	15.35	95% Percentile Bootstrap UCL	6.528
95% BCA Bootstrap UCL	7.782		
90% Chebyshev(Mean, Sd) UCL	8.025	95% Chebyshev(Mean, Sd) UCL	9.642
97.5% Chebyshev(Mean, Sd) UCL	11.89	99% Chebyshev(Mean, Sd) UCL	16.29

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	4.013

Maximum	9.38	Median	3.53
SD	2.351	Std. Error of Mean	0.784
Coefficient of Variation	0.586	Skewness	1.72
Mean of logged Data	1.266	SD of logged Data	0.505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.47	95% Adjusted-CLT UCL (Chen-1995)	5.782
		95% Modified-t UCL (Johnson-1978)	5.545

Nonparametric Distribution Free UCLs

95% CLT UCL	5.302	95% Jackknife UCL	5.47
95% Standard Bootstrap UCL	5.255	95% Bootstrap-t UCL	6.689
95% Hall's Bootstrap UCL	11.72	95% Percentile Bootstrap UCL	5.372
95% BCA Bootstrap UCL	5.759		
90% Chebyshev(Mean, Sd) UCL	6.364	95% Chebyshev(Mean, Sd) UCL	7.429
97.5% Chebyshev(Mean, Sd) UCL	8.907	99% Chebyshev(Mean, Sd) UCL	11.81

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.29	Mean	6.869
Maximum	15.2	Median	5.35
SD	3.999	Std. Error of Mean	1.333
Coefficient of Variation	0.582	Skewness	1.216
Mean of logged Data	1.789	SD of logged Data	0.551

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.348	95% Adjusted-CLT UCL (Chen-1995)	9.639
		95% Modified-t UCL (Johnson-1978)	9.438

Nonparametric Distribution Free UCLs

95% CLT UCL	9.062	95% Jackknife UCL	9.348
95% Standard Bootstrap UCL	8.935	95% Bootstrap-t UCL	10.66
95% Hall's Bootstrap UCL	11.58	95% Percentile Bootstrap UCL	9.242
95% BCA Bootstrap UCL	9.529		

90% Chebyshev(Mean, Sd) UCL	10.87	95% Chebyshev(Mean, Sd) UCL	12.68
97.5% Chebyshev(Mean, Sd) UCL	15.19	99% Chebyshev(Mean, Sd) UCL	20.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.35	Mean	3.644
Maximum	6.22	Median	3.32
SD	1.136	Std. Error of Mean	0.379
Coefficient of Variation	0.312	Skewness	1.535
Mean of logged Data	1.255	SD of logged Data	0.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.348	95% Adjusted-CLT UCL (Chen-1995)	4.474
		95% Modified-t UCL (Johnson-1978)	4.38

Nonparametric Distribution Free UCLs

95% CLT UCL	4.267	95% Jackknife UCL	4.348
95% Standard Bootstrap UCL	4.247	95% Bootstrap-t UCL	4.748
95% Hall's Bootstrap UCL	7.954	95% Percentile Bootstrap UCL	4.269
95% BCA Bootstrap UCL	4.534		
90% Chebyshev(Mean, Sd) UCL	4.78	95% Chebyshev(Mean, Sd) UCL	5.294
97.5% Chebyshev(Mean, Sd) UCL	6.008	99% Chebyshev(Mean, Sd) UCL	7.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.1	Mean	2.869
Maximum	5.62	Median	2.25
SD	1.187	Std. Error of Mean	0.396
Coefficient of Variation	0.414	Skewness	1.929
Mean of logged Data	0.995	SD of logged Data	0.342

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.605	95% Adjusted-CLT UCL (Chen-1995)	3.792
		95% Modified-t UCL (Johnson-1978)	3.648

Nonparametric Distribution Free UCLs

95% CLT UCL	3.52	95% Jackknife UCL	3.605
95% Standard Bootstrap UCL	3.477	95% Bootstrap-t UCL	5.06
95% Hall's Bootstrap UCL	6.43	95% Percentile Bootstrap UCL	3.557
95% BCA Bootstrap UCL	3.737		
90% Chebyshev(Mean, Sd) UCL	4.057	95% Chebyshev(Mean, Sd) UCL	4.595
97.5% Chebyshev(Mean, Sd) UCL	5.341	99% Chebyshev(Mean, Sd) UCL	6.807

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	5.193
Maximum	11.5	Median	4.79
SD	3.167	Std. Error of Mean	1.056
Coefficient of Variation	0.61	Skewness	0.977
Mean of logged Data	1.481	SD of logged Data	0.62

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.156	95% Adjusted-CLT UCL (Chen-1995)	7.297
		95% Modified-t UCL (Johnson-1978)	7.213

Nonparametric Distribution Free UCLs

95% CLT UCL	6.929	95% Jackknife UCL	7.156
95% Standard Bootstrap UCL	6.912	95% Bootstrap-t UCL	7.709
95% Hall's Bootstrap UCL	8.436	95% Percentile Bootstrap UCL	6.89
95% BCA Bootstrap UCL	7.151		
90% Chebyshev(Mean, Sd) UCL	8.36	95% Chebyshev(Mean, Sd) UCL	9.794
97.5% Chebyshev(Mean, Sd) UCL	11.79	99% Chebyshev(Mean, Sd) UCL	15.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.105	Mean	3.243
Maximum	3.325	Median	3.265
SD	0.0768	Std. Error of Mean	0.0256
Coefficient of Variation	0.0237	Skewness	-0.679
Mean of logged Data	1.176	SD of logged Data	0.0238

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.291	95% Adjusted-CLT UCL (Chen-1995)	3.279
		95% Modified-t UCL (Johnson-1978)	3.29

Nonparametric Distribution Free UCLs

95% CLT UCL	3.285	95% Jackknife UCL	3.291
95% Standard Bootstrap UCL	3.284	95% Bootstrap-t UCL	3.285
95% Hall's Bootstrap UCL	3.278	95% Percentile Bootstrap UCL	3.281
95% BCA Bootstrap UCL	3.277		
90% Chebyshev(Mean, Sd) UCL	3.32	95% Chebyshev(Mean, Sd) UCL	3.355
97.5% Chebyshev(Mean, Sd) UCL	3.403	99% Chebyshev(Mean, Sd) UCL	3.498

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	5.854
Maximum	14.3	Median	5.27
SD	4.158	Std. Error of Mean	1.386
Coefficient of Variation	0.71	Skewness	1.076
Mean of logged Data	1.542	SD of logged Data	0.718

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.431	95% Adjusted-CLT UCL (Chen-1995)	8.665
		95% Modified-t UCL (Johnson-1978)	8.514

Nonparametric Distribution Free UCLs

95% CLT UCL	8.134	95% Jackknife UCL	8.431
95% Standard Bootstrap UCL	7.979	95% Bootstrap-t UCL	9.413
95% Hall's Bootstrap UCL	9.06	95% Percentile Bootstrap UCL	8.013
95% BCA Bootstrap UCL	8.456		
90% Chebyshev(Mean, Sd) UCL	10.01	95% Chebyshev(Mean, Sd) UCL	11.9
97.5% Chebyshev(Mean, Sd) UCL	14.51	99% Chebyshev(Mean, Sd) UCL	19.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.24	Mean	1.297
Maximum	1.33	Median	1.305
SD	0.031	Std. Error of Mean	0.0103
Coefficient of Variation	0.0239	Skewness	-0.742
Mean of logged Data	0.26	SD of logged Data	0.0241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.316	95% Adjusted-CLT UCL (Chen-1995)	1.312
		95% Modified-t UCL (Johnson-1978)	1.316

Nonparametric Distribution Free UCLs

95% CLT UCL	1.314	95% Jackknife UCL	1.316
95% Standard Bootstrap UCL	1.313	95% Bootstrap-t UCL	1.313
95% Hall's Bootstrap UCL	1.311	95% Percentile Bootstrap UCL	1.313
95% BCA Bootstrap UCL	1.311		
90% Chebyshev(Mean, Sd) UCL	1.328	95% Chebyshev(Mean, Sd) UCL	1.342
97.5% Chebyshev(Mean, Sd) UCL	1.362	99% Chebyshev(Mean, Sd) UCL	1.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.315	Mean	3.546
Maximum	7.06	Median	3.305
SD	1.399	Std. Error of Mean	0.466
Coefficient of Variation	0.394	Skewness	2.357
Mean of logged Data	1.214	SD of logged Data	0.319

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.412	95% Adjusted-CLT UCL (Chen-1995)	4.704
		95% Modified-t UCL (Johnson-1978)	4.473

Nonparametric Distribution Free UCLs

95% CLT UCL	4.312	95% Jackknife UCL	4.412
95% Standard Bootstrap UCL	4.265	95% Bootstrap-t UCL	5.345
95% Hall's Bootstrap UCL	7.654	95% Percentile Bootstrap UCL	4.359
95% BCA Bootstrap UCL	4.663		
90% Chebyshev(Mean, Sd) UCL	4.944	95% Chebyshev(Mean, Sd) UCL	5.578
97.5% Chebyshev(Mean, Sd) UCL	6.457	99% Chebyshev(Mean, Sd) UCL	8.184

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.99	Mean	1.514
Maximum	1.91	Median	1.71
SD	0.373	Std. Error of Mean	0.124
Coefficient of Variation	0.246	Skewness	-0.614
Mean of logged Data	0.385	SD of logged Data	0.27

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.745	95% Adjusted-CLT UCL (Chen-1995)	1.692
		95% Modified-t UCL (Johnson-1978)	1.741

Nonparametric Distribution Free UCLs

95% CLT UCL	1.719	95% Jackknife UCL	1.745
95% Standard Bootstrap UCL	1.709	95% Bootstrap-t UCL	1.728
95% Hall's Bootstrap UCL	1.673	95% Percentile Bootstrap UCL	1.691
95% BCA Bootstrap UCL	1.683		
90% Chebyshev(Mean, Sd) UCL	1.887	95% Chebyshev(Mean, Sd) UCL	2.056
97.5% Chebyshev(Mean, Sd) UCL	2.29	99% Chebyshev(Mean, Sd) UCL	2.751

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.32	Mean	4.456
Maximum	13	Median	3.29
SD	3.289	Std. Error of Mean	1.096
Coefficient of Variation	0.738	Skewness	2.73
Mean of logged Data	1.351	SD of logged Data	0.498

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.495	95% Adjusted-CLT UCL (Chen-1995)	7.325
		95% Modified-t UCL (Johnson-1978)	6.661

Nonparametric Distribution Free UCLs

95% CLT UCL	6.259	95% Jackknife UCL	6.495
95% Standard Bootstrap UCL	6.173	95% Bootstrap-t UCL	17.79
95% Hall's Bootstrap UCL	25.19	95% Percentile Bootstrap UCL	6.517
95% BCA Bootstrap UCL	7.132		
90% Chebyshev(Mean, Sd) UCL	7.745	95% Chebyshev(Mean, Sd) UCL	9.235
97.5% Chebyshev(Mean, Sd) UCL	11.3	99% Chebyshev(Mean, Sd) UCL	15.36

Suggested UCL to Use

95% Student's-t UCL	6.495	or 95% Modified-t UCL	6.661

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.29	Mean	8.336
Maximum	25.4	Median	6.31
SD	7.084	Std. Error of Mean	2.361
Coefficient of Variation	0.85	Skewness	2.087
Mean of logged Data	1.882	SD of logged Data	0.692

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.73	95% Adjusted-CLT UCL (Chen-1995)	13.98
		95% Modified-t UCL (Johnson-1978)	13

Nonparametric Distribution Free UCLs

95% CLT UCL	12.22	95% Jackknife UCL	12.73
95% Standard Bootstrap UCL	11.96	95% Bootstrap-t UCL	19.35
95% Hall's Bootstrap UCL	30.4	95% Percentile Bootstrap UCL	12.26
95% BCA Bootstrap UCL	13.82		
90% Chebyshev(Mean, Sd) UCL	15.42	95% Chebyshev(Mean, Sd) UCL	18.63
97.5% Chebyshev(Mean, Sd) UCL	23.08	99% Chebyshev(Mean, Sd) UCL	31.83

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:12:11 AM
From File	40005H_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.41	Mean	12.46
Maximum	15	Median	13.2
SD	2.225	Std. Error of Mean	0.742
Coefficient of Variation	0.179	Skewness	-0.385
Mean of logged Data	2.507	SD of logged Data	0.187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.83	95% Adjusted-CLT UCL (Chen-1995)	13.57
		95% Modified-t UCL (Johnson-1978)	13.82

Nonparametric Distribution Free UCLs

95% CLT UCL	13.68	95% Jackknife UCL	13.83
95% Standard Bootstrap UCL	13.61	95% Bootstrap-t UCL	13.71
95% Hall's Bootstrap UCL	13.46	95% Percentile Bootstrap UCL	13.6
95% BCA Bootstrap UCL	13.4		
90% Chebyshev(Mean, Sd) UCL	14.68	95% Chebyshev(Mean, Sd) UCL	15.69
97.5% Chebyshev(Mean, Sd) UCL	17.09	99% Chebyshev(Mean, Sd) UCL	19.83

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9	Mean	10.42
Maximum	12	Median	10.5
SD	0.97	Std. Error of Mean	0.323
Coefficient of Variation	0.0931	Skewness	0.207

Mean of logged Data	2.34	SD of logged Data	0.0929

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.02	95% Adjusted-CLT UCL (Chen-1995)	10.98
		95% Modified-t UCL (Johnson-1978)	11.03

Nonparametric Distribution Free UCLs

95% CLT UCL	10.96	95% Jackknife UCL	11.02
95% Standard Bootstrap UCL	10.92	95% Bootstrap-t UCL	11.11
95% Hall's Bootstrap UCL	11.07	95% Percentile Bootstrap UCL	10.94
95% BCA Bootstrap UCL	10.92		
90% Chebyshev(Mean, Sd) UCL	11.39	95% Chebyshev(Mean, Sd) UCL	11.83
97.5% Chebyshev(Mean, Sd) UCL	12.44	99% Chebyshev(Mean, Sd) UCL	13.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	37.1	Mean	44.4
Maximum	52	Median	44.5
SD	5.539	Std. Error of Mean	1.846
Coefficient of Variation	0.125	Skewness	-0.0233
Mean of logged Data	3.786	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.83	95% Adjusted-CLT UCL (Chen-1995)	47.42
		95% Modified-t UCL (Johnson-1978)	47.83

Nonparametric Distribution Free UCLs

95% CLT UCL	47.44	95% Jackknife UCL	47.83
95% Standard Bootstrap UCL	47.2	95% Bootstrap-t UCL	47.94
95% Hall's Bootstrap UCL	47.12	95% Percentile Bootstrap UCL	47.22
95% BCA Bootstrap UCL	47.33		
90% Chebyshev(Mean, Sd) UCL	49.94	95% Chebyshev(Mean, Sd) UCL	52.45
97.5% Chebyshev(Mean, Sd) UCL	55.93	99% Chebyshev(Mean, Sd) UCL	62.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.758	Mean	1.553
Maximum	2.33	Median	1.8
SD	0.547	Std. Error of Mean	0.182
Coefficient of Variation	0.352	Skewness	-0.274
Mean of logged Data	0.376	SD of logged Data	0.396

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.892	95% Adjusted-CLT UCL (Chen-1995)	1.835
		95% Modified-t UCL (Johnson-1978)	1.889

Nonparametric Distribution Free UCLs

95% CLT UCL	1.853	95% Jackknife UCL	1.892
95% Standard Bootstrap UCL	1.838	95% Bootstrap-t UCL	1.884
95% Hall's Bootstrap UCL	1.808	95% Percentile Bootstrap UCL	1.824
95% BCA Bootstrap UCL	1.817		
90% Chebyshev(Mean, Sd) UCL	2.1	95% Chebyshev(Mean, Sd) UCL	2.348
97.5% Chebyshev(Mean, Sd) UCL	2.692	99% Chebyshev(Mean, Sd) UCL	3.368

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.323	Mean	0.834
Maximum	3.21	Median	0.52

SD	0.903	Std. Error of Mean	0.301
Coefficient of Variation	1.083	Skewness	2.851
Mean of logged Data	-0.454	SD of logged Data	0.66

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.394	95% Adjusted-CLT UCL (Chen-1995)	1.635
		95% Modified-t UCL (Johnson-1978)	1.442

Nonparametric Distribution Free UCLs

95% CLT UCL	1.329	95% Jackknife UCL	1.394
95% Standard Bootstrap UCL	1.289	95% Bootstrap-t UCL	5.438
95% Hall's Bootstrap UCL	7.217	95% Percentile Bootstrap UCL	1.399
95% BCA Bootstrap UCL	1.691		
90% Chebyshev(Mean, Sd) UCL	1.737	95% Chebyshev(Mean, Sd) UCL	2.147
97.5% Chebyshev(Mean, Sd) UCL	2.715	99% Chebyshev(Mean, Sd) UCL	3.83

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.147

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.64	Mean	2.032
Maximum	2.16	Median	2.085
SD	0.16	Std. Error of Mean	0.0535
Coefficient of Variation	0.079	Skewness	-2.162
Mean of logged Data	0.706	SD of logged Data	0.0851

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.131	95% Adjusted-CLT UCL (Chen-1995)	2.078
		95% Modified-t UCL (Johnson-1978)	2.125

Nonparametric Distribution Free UCLs

95% CLT UCL	2.12	95% Jackknife UCL	2.131
95% Standard Bootstrap UCL	2.113	95% Bootstrap-t UCL	2.099
95% Hall's Bootstrap UCL	2.09	95% Percentile Bootstrap UCL	2.105
95% BCA Bootstrap UCL	2.092		
90% Chebyshev(Mean, Sd) UCL	2.192	95% Chebyshev(Mean, Sd) UCL	2.265

97.5% Chebyshev(Mean, Sd) UCL	2.366	99% Chebyshev(Mean, Sd) UCL	2.564

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	3.118
Maximum	6	Median	2.43
SD	1.538	Std. Error of Mean	0.513
Coefficient of Variation	0.493	Skewness	1.298
Mean of logged Data	1.046	SD of logged Data	0.431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.072	95% Adjusted-CLT UCL (Chen-1995)	4.199
		95% Modified-t UCL (Johnson-1978)	4.109

Nonparametric Distribution Free UCLs

95% CLT UCL	3.962	95% Jackknife UCL	4.072
95% Standard Bootstrap UCL	3.918	95% Bootstrap-t UCL	5.379
95% Hall's Bootstrap UCL	4.217	95% Percentile Bootstrap UCL	3.935
95% BCA Bootstrap UCL	4.148		
90% Chebyshev(Mean, Sd) UCL	4.657	95% Chebyshev(Mean, Sd) UCL	5.354
97.5% Chebyshev(Mean, Sd) UCL	6.321	99% Chebyshev(Mean, Sd) UCL	8.221

Suggested UCL to Use

95% Student's-t UCL	4.072	or 95% Modified-t UCL	4.109

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	3.913
Maximum	8.03	Median	2.46
SD	2.567	Std. Error of Mean	0.856

Coefficient of Variation	0.656	Skewness	0.934
Mean of logged Data	1.191	SD of logged Data	0.603

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.504	95% Adjusted-CLT UCL (Chen-1995)	5.605
		95% Modified-t UCL (Johnson-1978)	5.548

Nonparametric Distribution Free UCLs

95% CLT UCL	5.32	95% Jackknife UCL	5.504
95% Standard Bootstrap UCL	5.233	95% Bootstrap-t UCL	6.193
95% Hall's Bootstrap UCL	4.847	95% Percentile Bootstrap UCL	5.251
95% BCA Bootstrap UCL	5.407		
90% Chebyshev(Mean, Sd) UCL	6.48	95% Chebyshev(Mean, Sd) UCL	7.643
97.5% Chebyshev(Mean, Sd) UCL	9.256	99% Chebyshev(Mean, Sd) UCL	12.43

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.643

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.65	Mean	5.027
Maximum	9.59	Median	3.58
SD	2.888	Std. Error of Mean	0.963
Coefficient of Variation	0.574	Skewness	1.019
Mean of logged Data	1.485	SD of logged Data	0.521

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.817	95% Adjusted-CLT UCL (Chen-1995)	6.96
		95% Modified-t UCL (Johnson-1978)	6.872

Nonparametric Distribution Free UCLs

95% CLT UCL	6.611	95% Jackknife UCL	6.817
95% Standard Bootstrap UCL	6.537	95% Bootstrap-t UCL	7.878
95% Hall's Bootstrap UCL	6.28	95% Percentile Bootstrap UCL	6.583
95% BCA Bootstrap UCL	6.763		
90% Chebyshev(Mean, Sd) UCL	7.915	95% Chebyshev(Mean, Sd) UCL	9.224
97.5% Chebyshev(Mean, Sd) UCL	11.04	99% Chebyshev(Mean, Sd) UCL	14.61

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.224

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.63	Mean	3.423
Maximum	4.58	Median	3.24
SD	0.619	Std. Error of Mean	0.206
Coefficient of Variation	0.181	Skewness	1.054
Mean of logged Data	1.217	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.807	95% Adjusted-CLT UCL (Chen-1995)	3.84
		95% Modified-t UCL (Johnson-1978)	3.819

Nonparametric Distribution Free UCLs

95% CLT UCL	3.763	95% Jackknife UCL	3.807
95% Standard Bootstrap UCL	3.746	95% Bootstrap-t UCL	4.186
95% Hall's Bootstrap UCL	6.649	95% Percentile Bootstrap UCL	3.749
95% BCA Bootstrap UCL	3.791		
90% Chebyshev(Mean, Sd) UCL	4.043	95% Chebyshev(Mean, Sd) UCL	4.323
97.5% Chebyshev(Mean, Sd) UCL	4.712	99% Chebyshev(Mean, Sd) UCL	5.477

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	2.77
Maximum	4.46	Median	2.135
SD	1.002	Std. Error of Mean	0.334
Coefficient of Variation	0.362	Skewness	1.129
Mean of logged Data	0.968	SD of logged Data	0.329

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.391	95% Adjusted-CLT UCL (Chen-1995)	3.454
		95% Modified-t UCL (Johnson-1978)	3.412

Nonparametric Distribution Free UCLs

95% CLT UCL	3.319	95% Jackknife UCL	3.391
95% Standard Bootstrap UCL	3.291	95% Bootstrap-t UCL	4.117
95% Hall's Bootstrap UCL	3.711	95% Percentile Bootstrap UCL	3.351
95% BCA Bootstrap UCL	3.429		
90% Chebyshev(Mean, Sd) UCL	3.772	95% Chebyshev(Mean, Sd) UCL	4.226
97.5% Chebyshev(Mean, Sd) UCL	4.856	99% Chebyshev(Mean, Sd) UCL	6.093

Suggested UCL to Use

95% Student's-t UCL	3.391	or 95% Modified-t UCL	3.412

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	5.053
Maximum	11.4	Median	2.85
SD	3.457	Std. Error of Mean	1.152
Coefficient of Variation	0.684	Skewness	0.84
Mean of logged Data	1.412	SD of logged Data	0.681

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.196	95% Adjusted-CLT UCL (Chen-1995)	7.293
		95% Modified-t UCL (Johnson-1978)	7.25

Nonparametric Distribution Free UCLs

95% CLT UCL	6.949	95% Jackknife UCL	7.196
95% Standard Bootstrap UCL	6.836	95% Bootstrap-t UCL	7.906
95% Hall's Bootstrap UCL	6.817	95% Percentile Bootstrap UCL	6.886
95% BCA Bootstrap UCL	7.041		
90% Chebyshev(Mean, Sd) UCL	8.51	95% Chebyshev(Mean, Sd) UCL	10.08
97.5% Chebyshev(Mean, Sd) UCL	12.25	99% Chebyshev(Mean, Sd) UCL	16.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.005	Mean	3.23
Maximum	3.325	Median	3.26
SD	0.106	Std. Error of Mean	0.0353
Coefficient of Variation	0.0328	Skewness	-1.426
Mean of logged Data	1.172	SD of logged Data	0.0334

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.296	95% Adjusted-CLT UCL (Chen-1995)	3.27
		95% Modified-t UCL (Johnson-1978)	3.293

Nonparametric Distribution Free UCLs

95% CLT UCL	3.288	95% Jackknife UCL	3.296
95% Standard Bootstrap UCL	3.284	95% Bootstrap-t UCL	3.278
95% Hall's Bootstrap UCL	3.274	95% Percentile Bootstrap UCL	3.281
95% BCA Bootstrap UCL	3.273		
90% Chebyshev(Mean, Sd) UCL	3.336	95% Chebyshev(Mean, Sd) UCL	3.384
97.5% Chebyshev(Mean, Sd) UCL	3.451	99% Chebyshev(Mean, Sd) UCL	3.581

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.105	Mean	15.68
Maximum	87.8	Median	6.14
SD	27.47	Std. Error of Mean	9.156
Coefficient of Variation	1.751	Skewness	2.829
Mean of logged Data	1.935	SD of logged Data	1.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.71	95% Adjusted-CLT UCL (Chen-1995)	39.97
		95% Modified-t UCL (Johnson-1978)	34.15

Nonparametric Distribution Free UCLs

95% CLT UCL	30.74	95% Jackknife UCL	32.71
95% Standard Bootstrap UCL	30.03	95% Bootstrap-t UCL	97.39
95% Hall's Bootstrap UCL	89.98	95% Percentile Bootstrap UCL	32.77
95% BCA Bootstrap UCL	42.12		
90% Chebyshev(Mean, Sd) UCL	43.15	95% Chebyshev(Mean, Sd) UCL	55.59
97.5% Chebyshev(Mean, Sd) UCL	72.86	99% Chebyshev(Mean, Sd) UCL	106.8

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.2	Mean	2.968
Maximum	16.4	Median	1.305
SD	5.037	Std. Error of Mean	1.679
Coefficient of Variation	1.697	Skewness	3
Mean of logged Data	0.536	SD of logged Data	0.849

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.091	95% Adjusted-CLT UCL (Chen-1995)	7.524
		95% Modified-t UCL (Johnson-1978)	6.37

Nonparametric Distribution Free UCLs

95% CLT UCL	5.73	95% Jackknife UCL	6.091
95% Standard Bootstrap UCL	5.602	95% Bootstrap-t UCL	324.3
95% Hall's Bootstrap UCL	180.8	95% Percentile Bootstrap UCL	6.317
95% BCA Bootstrap UCL	8.003		
90% Chebyshev(Mean, Sd) UCL	8.005	95% Chebyshev(Mean, Sd) UCL	10.29
97.5% Chebyshev(Mean, Sd) UCL	13.45	99% Chebyshev(Mean, Sd) UCL	19.67

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.29

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.91	Mean	3.671
Maximum	5.39	Median	3.24
SD	0.894	Std. Error of Mean	0.298
Coefficient of Variation	0.244	Skewness	1.29
Mean of logged Data	1.277	SD of logged Data	0.223

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.225	95% Adjusted-CLT UCL (Chen-1995)	4.298
		95% Modified-t UCL (Johnson-1978)	4.247

Nonparametric Distribution Free UCLs

95% CLT UCL	4.161	95% Jackknife UCL	4.225
95% Standard Bootstrap UCL	4.134	95% Bootstrap-t UCL	4.898
95% Hall's Bootstrap UCL	4.385	95% Percentile Bootstrap UCL	4.147
95% BCA Bootstrap UCL	4.199		
90% Chebyshev(Mean, Sd) UCL	4.565	95% Chebyshev(Mean, Sd) UCL	4.971
97.5% Chebyshev(Mean, Sd) UCL	5.533	99% Chebyshev(Mean, Sd) UCL	6.637

Suggested UCL to Use

95% Student's-t UCL	4.225	or 95% Modified-t UCL	4.247

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.701	Mean	1.837
Maximum	4.39	Median	1.56
SD	1.223	Std. Error of Mean	0.408
Coefficient of Variation	0.666	Skewness	1.356
Mean of logged Data	0.434	SD of logged Data	0.611

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.595	95% Adjusted-CLT UCL (Chen-1995)	2.705
		95% Modified-t UCL (Johnson-1978)	2.626

Nonparametric Distribution Free UCLs

95% CLT UCL	2.508	95% Jackknife UCL	2.595
95% Standard Bootstrap UCL	2.457	95% Bootstrap-t UCL	3.273
95% Hall's Bootstrap UCL	5.618	95% Percentile Bootstrap UCL	2.496
95% BCA Bootstrap UCL	2.623		
90% Chebyshev(Mean, Sd) UCL	3.06	95% Chebyshev(Mean, Sd) UCL	3.614
97.5% Chebyshev(Mean, Sd) UCL	4.383	99% Chebyshev(Mean, Sd) UCL	5.893

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.005	Mean	18.06
Maximum	127	Median	3.26
SD	40.91	Std. Error of Mean	13.64
Coefficient of Variation	2.265	Skewness	2.984
Mean of logged Data	1.787	SD of logged Data	1.21

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.42	95% Adjusted-CLT UCL (Chen-1995)	54.99
		95% Modified-t UCL (Johnson-1978)	45.68

Nonparametric Distribution Free UCLs

95% CLT UCL	40.49	95% Jackknife UCL	43.42
95% Standard Bootstrap UCL	38.79	95% Bootstrap-t UCL	645.2
95% Hall's Bootstrap UCL	468	95% Percentile Bootstrap UCL	45.15
95% BCA Bootstrap UCL	59.06		
90% Chebyshev(Mean, Sd) UCL	58.97	95% Chebyshev(Mean, Sd) UCL	77.5
97.5% Chebyshev(Mean, Sd) UCL	103.2	99% Chebyshev(Mean, Sd) UCL	153.7

Suggested UCL to Use

95% Hall's Bootstrap UCL 468

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.65	Mean	7.404
Maximum	16	Median	5.06
SD	5.115	Std. Error of Mean	1.705
Coefficient of Variation	0.691	Skewness	0.672
Mean of logged Data	1.779	SD of logged Data	0.714

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.57	95% Adjusted-CLT UCL (Chen-1995)	10.62
		95% Modified-t UCL (Johnson-1978)	10.64

Nonparametric Distribution Free UCLs

95% CLT UCL	10.21	95% Jackknife UCL	10.57
95% Standard Bootstrap UCL	10.09	95% Bootstrap-t UCL	11.44
95% Hall's Bootstrap UCL	9.941	95% Percentile Bootstrap UCL	10.19
95% BCA Bootstrap UCL	10.28		
90% Chebyshev(Mean, Sd) UCL	12.52	95% Chebyshev(Mean, Sd) UCL	14.84
97.5% Chebyshev(Mean, Sd) UCL	18.05	99% Chebyshev(Mean, Sd) UCL	24.37

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:13:21 AM
From File	40005l_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.88	Mean	9.509
Maximum	10.7	Median	9.42
SD	0.655	Std. Error of Mean	0.218
Coefficient of Variation	0.0689	Skewness	0.662
Mean of logged Data	2.25	SD of logged Data	0.0678

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.915	95% Adjusted-CLT UCL (Chen-1995)	9.919
		95% Modified-t UCL (Johnson-1978)	9.923

Nonparametric Distribution Free UCLs

95% CLT UCL	9.868	95% Jackknife UCL	9.915
95% Standard Bootstrap UCL	9.844	95% Bootstrap-t UCL	10.02
95% Hall's Bootstrap UCL	9.872	95% Percentile Bootstrap UCL	9.879
95% BCA Bootstrap UCL	9.88		
90% Chebyshev(Mean, Sd) UCL	10.16	95% Chebyshev(Mean, Sd) UCL	10.46
97.5% Chebyshev(Mean, Sd) UCL	10.87	99% Chebyshev(Mean, Sd) UCL	11.68

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	7.51	Mean	8.417
Maximum	9.27	Median	8.47
SD	0.583	Std. Error of Mean	0.194
Coefficient of Variation	0.0693	Skewness	-0.179
Mean of logged Data	2.128	SD of logged Data	0.0698

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.778	95% Adjusted-CLT UCL (Chen-1995)	8.724
		95% Modified-t UCL (Johnson-1978)	8.776

Nonparametric Distribution Free UCLs

95% CLT UCL	8.736	95% Jackknife UCL	8.778
95% Standard Bootstrap UCL	8.717	95% Bootstrap-t UCL	8.739
95% Hall's Bootstrap UCL	8.72	95% Percentile Bootstrap UCL	8.722
95% BCA Bootstrap UCL	8.718		
90% Chebyshev(Mean, Sd) UCL	9	95% Chebyshev(Mean, Sd) UCL	9.264
97.5% Chebyshev(Mean, Sd) UCL	9.63	99% Chebyshev(Mean, Sd) UCL	10.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	34.8	Mean	37.24
Maximum	40	Median	37.2
SD	1.909	Std. Error of Mean	0.636
Coefficient of Variation	0.0512	Skewness	0.0423
Mean of logged Data	3.616	SD of logged Data	0.0513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.43	95% Adjusted-CLT UCL (Chen-1995)	38.3
		95% Modified-t UCL (Johnson-1978)	38.43

Nonparametric Distribution Free UCLs

95% CLT UCL	38.29	95% Jackknife UCL	38.43
95% Standard Bootstrap UCL	38.21	95% Bootstrap-t UCL	38.46
95% Hall's Bootstrap UCL	38.16	95% Percentile Bootstrap UCL	38.28
95% BCA Bootstrap UCL	38.18		
90% Chebyshev(Mean, Sd) UCL	39.15	95% Chebyshev(Mean, Sd) UCL	40.02
97.5% Chebyshev(Mean, Sd) UCL	41.22	99% Chebyshev(Mean, Sd) UCL	43.57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.585	Mean	1.48
Maximum	1.98	Median	1.86
SD	0.632	Std. Error of Mean	0.211
Coefficient of Variation	0.427	Skewness	-0.854
Mean of logged Data	0.277	SD of logged Data	0.549

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.872	95% Adjusted-CLT UCL (Chen-1995)	1.762
		95% Modified-t UCL (Johnson-1978)	1.862

Nonparametric Distribution Free UCLs

95% CLT UCL	1.827	95% Jackknife UCL	1.872
95% Standard Bootstrap UCL	1.808	95% Bootstrap-t UCL	1.769
95% Hall's Bootstrap UCL	1.719	95% Percentile Bootstrap UCL	1.775
95% BCA Bootstrap UCL	1.774		
90% Chebyshev(Mean, Sd) UCL	2.112	95% Chebyshev(Mean, Sd) UCL	2.399
97.5% Chebyshev(Mean, Sd) UCL	2.796	99% Chebyshev(Mean, Sd) UCL	3.577

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.399

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.486	Mean	0.519
Maximum	0.618	Median	0.505
SD	0.0398	Std. Error of Mean	0.0133

Coefficient of Variation	0.0768	Skewness	2.302
Mean of logged Data	-0.659	SD of logged Data	0.0722

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.544	95% Adjusted-CLT UCL (Chen-1995)	0.552
		95% Modified-t UCL (Johnson-1978)	0.545

Nonparametric Distribution Free UCLs

95% CLT UCL	0.541	95% Jackknife UCL	0.544
95% Standard Bootstrap UCL	0.54	95% Bootstrap-t UCL	0.576
95% Hall's Bootstrap UCL	0.628	95% Percentile Bootstrap UCL	0.542
95% BCA Bootstrap UCL	0.551		
90% Chebyshev(Mean, Sd) UCL	0.559	95% Chebyshev(Mean, Sd) UCL	0.577
97.5% Chebyshev(Mean, Sd) UCL	0.602	99% Chebyshev(Mean, Sd) UCL	0.651

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.53	Mean	1.997
Maximum	2.14	Median	2.02
SD	0.184	Std. Error of Mean	0.0613
Coefficient of Variation	0.0921	Skewness	-2.469
Mean of logged Data	0.687	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.111	95% Adjusted-CLT UCL (Chen-1995)	2.044
		95% Modified-t UCL (Johnson-1978)	2.102

Nonparametric Distribution Free UCLs

95% CLT UCL	2.097	95% Jackknife UCL	2.111
95% Standard Bootstrap UCL	2.09	95% Bootstrap-t UCL	2.076
95% Hall's Bootstrap UCL	2.058	95% Percentile Bootstrap UCL	2.076
95% BCA Bootstrap UCL	2.065		
90% Chebyshev(Mean, Sd) UCL	2.18	95% Chebyshev(Mean, Sd) UCL	2.264
97.5% Chebyshev(Mean, Sd) UCL	2.379	99% Chebyshev(Mean, Sd) UCL	2.606

Suggested UCL to Use

95% Student's-t UCL	2.111	or 95% Modified-t UCL	2.102

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.97	Mean	2.906
Maximum	9.71	Median	2.05
SD	2.552	Std. Error of Mean	0.851
Coefficient of Variation	0.878	Skewness	2.997
Mean of logged Data	0.892	SD of logged Data	0.518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.488	95% Adjusted-CLT UCL (Chen-1995)	5.213
		95% Modified-t UCL (Johnson-1978)	4.629

Nonparametric Distribution Free UCLs

95% CLT UCL	4.305	95% Jackknife UCL	4.488
95% Standard Bootstrap UCL	4.205	95% Bootstrap-t UCL	49.86
95% Hall's Bootstrap UCL	26.99	95% Percentile Bootstrap UCL	4.594
95% BCA Bootstrap UCL	5.436		
90% Chebyshev(Mean, Sd) UCL	5.458	95% Chebyshev(Mean, Sd) UCL	6.614
97.5% Chebyshev(Mean, Sd) UCL	8.219	99% Chebyshev(Mean, Sd) UCL	11.37

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.614

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.015	Mean	3.047
Maximum	10	Median	2.105
SD	2.616	Std. Error of Mean	0.872
Coefficient of Variation	0.859	Skewness	2.963

Mean of logged Data	0.944	SD of logged Data	0.518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.668	95% Adjusted-CLT UCL (Chen-1995)	5.401
		95% Modified-t UCL (Johnson-1978)	4.812

Nonparametric Distribution Free UCLs

95% CLT UCL	4.481	95% Jackknife UCL	4.668
95% Standard Bootstrap UCL	4.379	95% Bootstrap-t UCL	18.61
95% Hall's Bootstrap UCL	16.46	95% Percentile Bootstrap UCL	4.775
95% BCA Bootstrap UCL	5.582		
90% Chebyshev(Mean, Sd) UCL	5.663	95% Chebyshev(Mean, Sd) UCL	6.848
97.5% Chebyshev(Mean, Sd) UCL	8.492	99% Chebyshev(Mean, Sd) UCL	11.72

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.848

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.61	Mean	4.364
Maximum	14.3	Median	3.155
SD	3.732	Std. Error of Mean	1.244
Coefficient of Variation	0.855	Skewness	2.981
Mean of logged Data	1.305	SD of logged Data	0.513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.678	95% Adjusted-CLT UCL (Chen-1995)	7.731
		95% Modified-t UCL (Johnson-1978)	6.884

Nonparametric Distribution Free UCLs

95% CLT UCL	6.411	95% Jackknife UCL	6.678
95% Standard Bootstrap UCL	6.238	95% Bootstrap-t UCL	51.04
95% Hall's Bootstrap UCL	31.62	95% Percentile Bootstrap UCL	6.831
95% BCA Bootstrap UCL	7.972		
90% Chebyshev(Mean, Sd) UCL	8.096	95% Chebyshev(Mean, Sd) UCL	9.787
97.5% Chebyshev(Mean, Sd) UCL	12.13	99% Chebyshev(Mean, Sd) UCL	16.74

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.787

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.035	Mean	3.473
Maximum	5.95	Median	3.155
SD	0.933	Std. Error of Mean	0.311
Coefficient of Variation	0.269	Skewness	2.951
Mean of logged Data	1.222	SD of logged Data	0.212

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.052	95% Adjusted-CLT UCL (Chen-1995)	4.312
		95% Modified-t UCL (Johnson-1978)	4.102

Nonparametric Distribution Free UCLs

95% CLT UCL	3.985	95% Jackknife UCL	4.052
95% Standard Bootstrap UCL	3.961	95% Bootstrap-t UCL	7.568
95% Hall's Bootstrap UCL	6.735	95% Percentile Bootstrap UCL	4.084
95% BCA Bootstrap UCL	4.392		
90% Chebyshev(Mean, Sd) UCL	4.406	95% Chebyshev(Mean, Sd) UCL	4.829
97.5% Chebyshev(Mean, Sd) UCL	5.415	99% Chebyshev(Mean, Sd) UCL	6.567

Suggested UCL to Use

95% Student's-t UCL	4.052	or 95% Modified-t UCL	4.102

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.97	Mean	2.497
Maximum	6.03	Median	2.05
SD	1.326	Std. Error of Mean	0.442
Coefficient of Variation	0.531	Skewness	2.99
Mean of logged Data	0.84	SD of logged Data	0.36

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.319	95% Adjusted-CLT UCL (Chen-1995)	3.695
		95% Modified-t UCL (Johnson-1978)	3.392

Nonparametric Distribution Free UCLs

95% CLT UCL	3.224	95% Jackknife UCL	3.319
95% Standard Bootstrap UCL	3.196	95% Bootstrap-t UCL	15.39
95% Hall's Bootstrap UCL	9.867	95% Percentile Bootstrap UCL	3.377
95% BCA Bootstrap UCL	3.413		
90% Chebyshev(Mean, Sd) UCL	3.823	95% Chebyshev(Mean, Sd) UCL	4.424
97.5% Chebyshev(Mean, Sd) UCL	5.257	99% Chebyshev(Mean, Sd) UCL	6.895

Suggested UCL to Use

95% Student's-t UCL	3.319	or 95% Modified-t UCL	3.392

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.015	Mean	3.456
Maximum	14	Median	2.105
SD	3.958	Std. Error of Mean	1.319
Coefficient of Variation	1.145	Skewness	2.988
Mean of logged Data	0.966	SD of logged Data	0.632

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.909	95% Adjusted-CLT UCL (Chen-1995)	7.03
		95% Modified-t UCL (Johnson-1978)	6.128

Nonparametric Distribution Free UCLs

95% CLT UCL	5.626	95% Jackknife UCL	5.909
95% Standard Bootstrap UCL	5.477	95% Bootstrap-t UCL	97.64
95% Hall's Bootstrap UCL	44.22	95% Percentile Bootstrap UCL	6.061
95% BCA Bootstrap UCL	7.431		
90% Chebyshev(Mean, Sd) UCL	7.414	95% Chebyshev(Mean, Sd) UCL	9.207
97.5% Chebyshev(Mean, Sd) UCL	11.7	99% Chebyshev(Mean, Sd) UCL	16.58

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.207

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.035	Mean	3.162
Maximum	3.295	Median	3.145
SD	0.0867	Std. Error of Mean	0.0289
Coefficient of Variation	0.0274	Skewness	0.347
Mean of logged Data	1.151	SD of logged Data	0.0273

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.215	95% Adjusted-CLT UCL (Chen-1995)	3.213
		95% Modified-t UCL (Johnson-1978)	3.216

Nonparametric Distribution Free UCLs

95% CLT UCL	3.209	95% Jackknife UCL	3.215
95% Standard Bootstrap UCL	3.205	95% Bootstrap-t UCL	3.22
95% Hall's Bootstrap UCL	3.211	95% Percentile Bootstrap UCL	3.206
95% BCA Bootstrap UCL	3.208		
90% Chebyshev(Mean, Sd) UCL	3.248	95% Chebyshev(Mean, Sd) UCL	3.288
97.5% Chebyshev(Mean, Sd) UCL	3.342	99% Chebyshev(Mean, Sd) UCL	3.449

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.015	Mean	4.55
Maximum	21.3	Median	2.105
SD	6.322	Std. Error of Mean	2.107
Coefficient of Variation	1.389	Skewness	2.929
Mean of logged Data	1.108	SD of logged Data	0.774

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.468	95% Adjusted-CLT UCL (Chen-1995)	10.21
		95% Modified-t UCL (Johnson-1978)	8.811

Nonparametric Distribution Free UCLs

95% CLT UCL	8.016	95% Jackknife UCL	8.468
95% Standard Bootstrap UCL	7.854	95% Bootstrap-t UCL	40.52
95% Hall's Bootstrap UCL	40.6	95% Percentile Bootstrap UCL	8.624
95% BCA Bootstrap UCL	10.82		
90% Chebyshev(Mean, Sd) UCL	10.87	95% Chebyshev(Mean, Sd) UCL	13.74
97.5% Chebyshev(Mean, Sd) UCL	17.71	99% Chebyshev(Mean, Sd) UCL	25.52

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.74

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.215	Mean	1.265
Maximum	1.32	Median	1.255
SD	0.0346	Std. Error of Mean	0.0115
Coefficient of Variation	0.0273	Skewness	0.389
Mean of logged Data	0.235	SD of logged Data	0.0272

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.286	95% Adjusted-CLT UCL (Chen-1995)	1.286
		95% Modified-t UCL (Johnson-1978)	1.287

Nonparametric Distribution Free UCLs

95% CLT UCL	1.284	95% Jackknife UCL	1.286
95% Standard Bootstrap UCL	1.282	95% Bootstrap-t UCL	1.289
95% Hall's Bootstrap UCL	1.286	95% Percentile Bootstrap UCL	1.283
95% BCA Bootstrap UCL	1.283		
90% Chebyshev(Mean, Sd) UCL	1.3	95% Chebyshev(Mean, Sd) UCL	1.315
97.5% Chebyshev(Mean, Sd) UCL	1.337	99% Chebyshev(Mean, Sd) UCL	1.38

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.035	Mean	3.593
Maximum	7.03	Median	3.155
SD	1.292	Std. Error of Mean	0.431
Coefficient of Variation	0.359	Skewness	2.974
Mean of logged Data	1.24	SD of logged Data	0.268

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.394	95% Adjusted-CLT UCL (Chen-1995)	4.758
		95% Modified-t UCL (Johnson-1978)	4.465

Nonparametric Distribution Free UCLs

95% CLT UCL	4.302	95% Jackknife UCL	4.394
95% Standard Bootstrap UCL	4.254	95% Bootstrap-t UCL	11.73
95% Hall's Bootstrap UCL	8.865	95% Percentile Bootstrap UCL	4.446
95% BCA Bootstrap UCL	4.862		
90% Chebyshev(Mean, Sd) UCL	4.885	95% Chebyshev(Mean, Sd) UCL	5.47
97.5% Chebyshev(Mean, Sd) UCL	6.282	99% Chebyshev(Mean, Sd) UCL	7.877

Suggested UCL to Use

95% Student's-t UCL	4.394	or 95% Modified-t UCL	4.465

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.651	Mean	1.806
Maximum	7.16	Median	0.99
SD	2.035	Std. Error of Mean	0.678
Coefficient of Variation	1.127	Skewness	2.852
Mean of logged Data	0.295	SD of logged Data	0.693

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.067	95% Adjusted-CLT UCL (Chen-1995)	3.61

		95% Modified-t UCL (Johnson-1978)	3.174

Nonparametric Distribution Free UCLs

95% CLT UCL	2.921	95% Jackknife UCL	3.067
95% Standard Bootstrap UCL	2.884	95% Bootstrap-t UCL	7.435
95% Hall's Bootstrap UCL	7.579	95% Percentile Bootstrap UCL	3.116
95% BCA Bootstrap UCL	3.706		
90% Chebyshev(Mean, Sd) UCL	3.84	95% Chebyshev(Mean, Sd) UCL	4.762
97.5% Chebyshev(Mean, Sd) UCL	6.041	99% Chebyshev(Mean, Sd) UCL	8.554

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.61	Mean	3.864
Maximum	10.1	Median	3.11
SD	2.347	Std. Error of Mean	0.782
Coefficient of Variation	0.607	Skewness	2.958
Mean of logged Data	1.256	SD of logged Data	0.402

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.319	95% Adjusted-CLT UCL (Chen-1995)	5.975
		95% Modified-t UCL (Johnson-1978)	5.448

Nonparametric Distribution Free UCLs

95% CLT UCL	5.151	95% Jackknife UCL	5.319
95% Standard Bootstrap UCL	5.085	95% Bootstrap-t UCL	22.66
95% Hall's Bootstrap UCL	16.76	95% Percentile Bootstrap UCL	5.411
95% BCA Bootstrap UCL	6.144		
90% Chebyshev(Mean, Sd) UCL	6.211	95% Chebyshev(Mean, Sd) UCL	7.274
97.5% Chebyshev(Mean, Sd) UCL	8.749	99% Chebyshev(Mean, Sd) UCL	11.65

Suggested UCL to Use

95% Student's-t UCL	5.319	or 95% Modified-t UCL	5.448

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.79	Mean	4.84
Maximum	18.3	Median	3.155
SD	5.051	Std. Error of Mean	1.684
Coefficient of Variation	1.044	Skewness	2.993
Mean of logged Data	1.344	SD of logged Data	0.589

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.971	95% Adjusted-CLT UCL (Chen-1995)	9.404
		95% Modified-t UCL (Johnson-1978)	8.251

Nonparametric Distribution Free UCLs

95% CLT UCL	7.609	95% Jackknife UCL	7.971
95% Standard Bootstrap UCL	7.478	95% Bootstrap-t UCL	75.29
95% Hall's Bootstrap UCL	53.68	95% Percentile Bootstrap UCL	8.173
95% BCA Bootstrap UCL	8.304		
90% Chebyshev(Mean, Sd) UCL	9.891	95% Chebyshev(Mean, Sd) UCL	12.18
97.5% Chebyshev(Mean, Sd) UCL	15.35	99% Chebyshev(Mean, Sd) UCL	21.59

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.18

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:14:28 AM
From File	40005J_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	8.47	Mean	9.726
Maximum	10.7	Median	9.59
SD	0.73	Std. Error of Mean	0.243
Coefficient of Variation	0.0751	Skewness	-0.162
Mean of logged Data	2.272	SD of logged Data	0.0758

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.18	95% Adjusted-CLT UCL (Chen-1995)	10.11
		95% Modified-t UCL (Johnson-1978)	10.18

Nonparametric Distribution Free UCLs

95% CLT UCL	10.13	95% Jackknife UCL	10.18
95% Standard Bootstrap UCL	10.1	95% Bootstrap-t UCL	10.21
95% Hall's Bootstrap UCL	10.11	95% Percentile Bootstrap UCL	10.1
95% BCA Bootstrap UCL	10.1		
90% Chebyshev(Mean, Sd) UCL	10.46	95% Chebyshev(Mean, Sd) UCL	10.79
97.5% Chebyshev(Mean, Sd) UCL	11.25	99% Chebyshev(Mean, Sd) UCL	12.15

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	7.93	Mean	8.574
Maximum	9.22	Median	8.4
SD	0.461	Std. Error of Mean	0.154
Coefficient of Variation	0.0537	Skewness	0.049

Mean of logged Data	2.148	SD of logged Data	0.0538

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.86	95% Adjusted-CLT UCL (Chen-1995)	8.83
		95% Modified-t UCL (Johnson-1978)	8.86

Nonparametric Distribution Free UCLs

95% CLT UCL	8.827	95% Jackknife UCL	8.86
95% Standard Bootstrap UCL	8.813	95% Bootstrap-t UCL	8.862
95% Hall's Bootstrap UCL	8.787	95% Percentile Bootstrap UCL	8.809
95% BCA Bootstrap UCL	8.817		
90% Chebyshev(Mean, Sd) UCL	9.035	95% Chebyshev(Mean, Sd) UCL	9.244
97.5% Chebyshev(Mean, Sd) UCL	9.534	99% Chebyshev(Mean, Sd) UCL	10.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	35.1	Mean	37.41
Maximum	39.8	Median	36.8
SD	1.641	Std. Error of Mean	0.547
Coefficient of Variation	0.0439	Skewness	0.0721
Mean of logged Data	3.621	SD of logged Data	0.0439

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.43	95% Adjusted-CLT UCL (Chen-1995)	38.33
		95% Modified-t UCL (Johnson-1978)	38.43

Nonparametric Distribution Free UCLs

95% CLT UCL	38.31	95% Jackknife UCL	38.43
95% Standard Bootstrap UCL	38.25	95% Bootstrap-t UCL	38.41
95% Hall's Bootstrap UCL	38.26	95% Percentile Bootstrap UCL	38.24
95% BCA Bootstrap UCL	38.27		
90% Chebyshev(Mean, Sd) UCL	39.05	95% Chebyshev(Mean, Sd) UCL	39.8
97.5% Chebyshev(Mean, Sd) UCL	40.83	99% Chebyshev(Mean, Sd) UCL	42.85

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.78	Mean	1.918
Maximum	1.99	Median	1.94
SD	0.0789	Std. Error of Mean	0.0263
Coefficient of Variation	0.0411	Skewness	-1.04
Mean of logged Data	0.65	SD of logged Data	0.0419

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.967	95% Adjusted-CLT UCL (Chen-1995)	1.951
		95% Modified-t UCL (Johnson-1978)	1.965

Nonparametric Distribution Free UCLs

95% CLT UCL	1.961	95% Jackknife UCL	1.967
95% Standard Bootstrap UCL	1.957	95% Bootstrap-t UCL	1.96
95% Hall's Bootstrap UCL	1.952	95% Percentile Bootstrap UCL	1.956
95% BCA Bootstrap UCL	1.951		
90% Chebyshev(Mean, Sd) UCL	1.997	95% Chebyshev(Mean, Sd) UCL	2.032
97.5% Chebyshev(Mean, Sd) UCL	2.082	99% Chebyshev(Mean, Sd) UCL	2.179

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.476	Mean	0.512
Maximum	0.53	Median	0.515
SD	0.0209	Std. Error of Mean	0.00698
Coefficient of Variation	0.0409	Skewness	-1.021
Mean of logged Data	-0.671	SD of logged Data	0.0416

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.525	95% Adjusted-CLT UCL (Chen-1995)	0.521
		95% Modified-t UCL (Johnson-1978)	0.524

Nonparametric Distribution Free UCLs

95% CLT UCL	0.523	95% Jackknife UCL	0.525
95% Standard Bootstrap UCL	0.523	95% Bootstrap-t UCL	0.522
95% Hall's Bootstrap UCL	0.521	95% Percentile Bootstrap UCL	0.522
95% BCA Bootstrap UCL	0.521		
90% Chebyshev(Mean, Sd) UCL	0.533	95% Chebyshev(Mean, Sd) UCL	0.542
97.5% Chebyshev(Mean, Sd) UCL	0.555	99% Chebyshev(Mean, Sd) UCL	0.581

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.93	Mean	2.078
Maximum	2.16	Median	2.1
SD	0.0864	Std. Error of Mean	0.0288
Coefficient of Variation	0.0416	Skewness	-1.034
Mean of logged Data	0.731	SD of logged Data	0.0423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.131	95% Adjusted-CLT UCL (Chen-1995)	2.115
		95% Modified-t UCL (Johnson-1978)	2.13

Nonparametric Distribution Free UCLs

95% CLT UCL	2.125	95% Jackknife UCL	2.131
95% Standard Bootstrap UCL	2.121	95% Bootstrap-t UCL	2.12
95% Hall's Bootstrap UCL	2.113	95% Percentile Bootstrap UCL	2.121
95% BCA Bootstrap UCL	2.114		
90% Chebyshev(Mean, Sd) UCL	2.164	95% Chebyshev(Mean, Sd) UCL	2.203

97.5% Chebyshev(Mean, Sd) UCL	2.258	99% Chebyshev(Mean, Sd) UCL	2.364

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.81	Mean	2.044
Maximum	2.15	Median	2.1
SD	0.121	Std. Error of Mean	0.0404
Coefficient of Variation	0.0592	Skewness	-1.057
Mean of logged Data	0.714	SD of logged Data	0.0609

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.12	95% Adjusted-CLT UCL (Chen-1995)	2.096
		95% Modified-t UCL (Johnson-1978)	2.117

Nonparametric Distribution Free UCLs

95% CLT UCL	2.111	95% Jackknife UCL	2.12
95% Standard Bootstrap UCL	2.106	95% Bootstrap-t UCL	2.106
95% Hall's Bootstrap UCL	2.096	95% Percentile Bootstrap UCL	2.102
95% BCA Bootstrap UCL	2.099		
90% Chebyshev(Mean, Sd) UCL	2.166	95% Chebyshev(Mean, Sd) UCL	2.22
97.5% Chebyshev(Mean, Sd) UCL	2.297	99% Chebyshev(Mean, Sd) UCL	2.446

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	1.6	Mean	1.977
Maximum	2.15	Median	2.06
SD	0.192	Std. Error of Mean	0.0639
Coefficient of Variation	0.097	Skewness	-1.155
Mean of logged Data	0.677	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.096	95% Adjusted-CLT UCL (Chen-1995)	2.055
		95% Modified-t UCL (Johnson-1978)	2.091

Nonparametric Distribution Free UCLs

95% CLT UCL	2.082	95% Jackknife UCL	2.096
95% Standard Bootstrap UCL	2.076	95% Bootstrap-t UCL	2.074
95% Hall's Bootstrap UCL	2.057	95% Percentile Bootstrap UCL	2.068
95% BCA Bootstrap UCL	2.061		
90% Chebyshev(Mean, Sd) UCL	2.168	95% Chebyshev(Mean, Sd) UCL	2.255
97.5% Chebyshev(Mean, Sd) UCL	2.376	99% Chebyshev(Mean, Sd) UCL	2.613

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.298
Maximum	4.14	Median	3.23
SD	0.345	Std. Error of Mean	0.115
Coefficient of Variation	0.105	Skewness	2.075
Mean of logged Data	1.189	SD of logged Data	0.0975

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.512	95% Adjusted-CLT UCL (Chen-1995)	3.573
		95% Modified-t UCL (Johnson-1978)	3.526

Nonparametric Distribution Free UCLs

95% CLT UCL	3.488	95% Jackknife UCL	3.512
95% Standard Bootstrap UCL	3.481	95% Bootstrap-t UCL	3.705
95% Hall's Bootstrap UCL	4.429	95% Percentile Bootstrap UCL	3.498
95% BCA Bootstrap UCL	3.55		
90% Chebyshev(Mean, Sd) UCL	3.644	95% Chebyshev(Mean, Sd) UCL	3.8
97.5% Chebyshev(Mean, Sd) UCL	4.017	99% Chebyshev(Mean, Sd) UCL	4.444

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.197
Maximum	3.32	Median	3.23
SD	0.13	Std. Error of Mean	0.0434
Coefficient of Variation	0.0408	Skewness	-1.044
Mean of logged Data	1.162	SD of logged Data	0.0415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.278	95% Adjusted-CLT UCL (Chen-1995)	3.253
		95% Modified-t UCL (Johnson-1978)	3.275

Nonparametric Distribution Free UCLs

95% CLT UCL	3.269	95% Jackknife UCL	3.278
95% Standard Bootstrap UCL	3.264	95% Bootstrap-t UCL	3.262
95% Hall's Bootstrap UCL	3.252	95% Percentile Bootstrap UCL	3.261
95% BCA Bootstrap UCL	3.255		
90% Chebyshev(Mean, Sd) UCL	3.328	95% Chebyshev(Mean, Sd) UCL	3.387
97.5% Chebyshev(Mean, Sd) UCL	3.468	99% Chebyshev(Mean, Sd) UCL	3.629

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.93	Mean	2.078
Maximum	2.16	Median	2.1
SD	0.0864	Std. Error of Mean	0.0288
Coefficient of Variation	0.0416	Skewness	-1.034
Mean of logged Data	0.731	SD of logged Data	0.0423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.131	95% Adjusted-CLT UCL (Chen-1995)	2.115
		95% Modified-t UCL (Johnson-1978)	2.13

Nonparametric Distribution Free UCLs

95% CLT UCL	2.125	95% Jackknife UCL	2.131
95% Standard Bootstrap UCL	2.121	95% Bootstrap-t UCL	2.121
95% Hall's Bootstrap UCL	2.114	95% Percentile Bootstrap UCL	2.12
95% BCA Bootstrap UCL	2.116		
90% Chebyshev(Mean, Sd) UCL	2.164	95% Chebyshev(Mean, Sd) UCL	2.203
97.5% Chebyshev(Mean, Sd) UCL	2.258	99% Chebyshev(Mean, Sd) UCL	2.364

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	2.347
Maximum	3.05	Median	2.125
SD	0.42	Std. Error of Mean	0.14
Coefficient of Variation	0.179	Skewness	0.724
Mean of logged Data	0.839	SD of logged Data	0.173

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.607	95% Adjusted-CLT UCL (Chen-1995)	2.613
		95% Modified-t UCL (Johnson-1978)	2.612

Nonparametric Distribution Free UCLs

95% CLT UCL	2.577	95% Jackknife UCL	2.607
95% Standard Bootstrap UCL	2.563	95% Bootstrap-t UCL	2.687
95% Hall's Bootstrap UCL	2.543	95% Percentile Bootstrap UCL	2.567
95% BCA Bootstrap UCL	2.603		
90% Chebyshev(Mean, Sd) UCL	2.766	95% Chebyshev(Mean, Sd) UCL	2.956
97.5% Chebyshev(Mean, Sd) UCL	3.22	99% Chebyshev(Mean, Sd) UCL	3.738

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.197
Maximum	3.32	Median	3.23
SD	0.13	Std. Error of Mean	0.0434
Coefficient of Variation	0.0408	Skewness	-1.044
Mean of logged Data	1.162	SD of logged Data	0.0415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.278	95% Adjusted-CLT UCL (Chen-1995)	3.253
		95% Modified-t UCL (Johnson-1978)	3.275

Nonparametric Distribution Free UCLs

95% CLT UCL	3.269	95% Jackknife UCL	3.278
95% Standard Bootstrap UCL	3.265	95% Bootstrap-t UCL	3.262
95% Hall's Bootstrap UCL	3.254	95% Percentile Bootstrap UCL	3.262
95% BCA Bootstrap UCL	3.253		
90% Chebyshev(Mean, Sd) UCL	3.328	95% Chebyshev(Mean, Sd) UCL	3.387
97.5% Chebyshev(Mean, Sd) UCL	3.468	99% Chebyshev(Mean, Sd) UCL	3.629

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.93	Mean	2.619
Maximum	4.73	Median	2.15
SD	1.013	Std. Error of Mean	0.338
Coefficient of Variation	0.387	Skewness	1.672
Mean of logged Data	0.909	SD of logged Data	0.327

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.247	95% Adjusted-CLT UCL (Chen-1995)	3.376
		95% Modified-t UCL (Johnson-1978)	3.278

Nonparametric Distribution Free UCLs

95% CLT UCL	3.175	95% Jackknife UCL	3.247
95% Standard Bootstrap UCL	3.133	95% Bootstrap-t UCL	5.877
95% Hall's Bootstrap UCL	6.288	95% Percentile Bootstrap UCL	3.218
95% BCA Bootstrap UCL	3.314		
90% Chebyshev(Mean, Sd) UCL	3.632	95% Chebyshev(Mean, Sd) UCL	4.091
97.5% Chebyshev(Mean, Sd) UCL	4.729	99% Chebyshev(Mean, Sd) UCL	5.98

Suggested UCL to Use

95% Student's-t UCL	3.247	or 95% Modified-t UCL	3.278

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.19	Mean	1.279
Maximum	1.33	Median	1.29
SD	0.0523	Std. Error of Mean	0.0174
Coefficient of Variation	0.0409	Skewness	-0.991
Mean of logged Data	0.246	SD of logged Data	0.0416

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.312	95% Adjusted-CLT UCL (Chen-1995)	1.302
		95% Modified-t UCL (Johnson-1978)	1.311

Nonparametric Distribution Free UCLs

95% CLT UCL	1.308	95% Jackknife UCL	1.312
95% Standard Bootstrap UCL	1.307	95% Bootstrap-t UCL	1.307
95% Hall's Bootstrap UCL	1.302	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.302		
90% Chebyshev(Mean, Sd) UCL	1.332	95% Chebyshev(Mean, Sd) UCL	1.355
97.5% Chebyshev(Mean, Sd) UCL	1.388	99% Chebyshev(Mean, Sd) UCL	1.453

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.53
Maximum	5.99	Median	3.265
SD	0.929	Std. Error of Mean	0.31
Coefficient of Variation	0.263	Skewness	2.922
Mean of logged Data	1.239	SD of logged Data	0.21

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.106	95% Adjusted-CLT UCL (Chen-1995)	4.361
		95% Modified-t UCL (Johnson-1978)	4.156

Nonparametric Distribution Free UCLs

95% CLT UCL	4.039	95% Jackknife UCL	4.106
95% Standard Bootstrap UCL	4.012	95% Bootstrap-t UCL	8.327
95% Hall's Bootstrap UCL	7.631	95% Percentile Bootstrap UCL	4.136
95% BCA Bootstrap UCL	4.192		
90% Chebyshev(Mean, Sd) UCL	4.459	95% Chebyshev(Mean, Sd) UCL	4.879
97.5% Chebyshev(Mean, Sd) UCL	5.463	99% Chebyshev(Mean, Sd) UCL	6.61

Suggested UCL to Use

95% Student's-t UCL	4.106	or 95% Modified-t UCL	4.156

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.9	Mean	1.68
Maximum	5.64	Median	1.02
SD	1.524	Std. Error of Mean	0.508
Coefficient of Variation	0.907	Skewness	2.733
Mean of logged Data	0.313	SD of logged Data	0.587

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.625	95% Adjusted-CLT UCL (Chen-1995)	3.01
		95% Modified-t UCL (Johnson-1978)	2.702

Nonparametric Distribution Free UCLs

95% CLT UCL	2.516	95% Jackknife UCL	2.625
95% Standard Bootstrap UCL	2.482	95% Bootstrap-t UCL	7.653
95% Hall's Bootstrap UCL	6.069	95% Percentile Bootstrap UCL	2.627
95% BCA Bootstrap UCL	3.167		
90% Chebyshev(Mean, Sd) UCL	3.204	95% Chebyshev(Mean, Sd) UCL	3.895
97.5% Chebyshev(Mean, Sd) UCL	4.853	99% Chebyshev(Mean, Sd) UCL	6.736

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.895

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.197
Maximum	3.32	Median	3.23
SD	0.13	Std. Error of Mean	0.0434
Coefficient of Variation	0.0408	Skewness	-1.044
Mean of logged Data	1.162	SD of logged Data	0.0415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.278	95% Adjusted-CLT UCL (Chen-1995)	3.253
		95% Modified-t UCL (Johnson-1978)	3.275

Nonparametric Distribution Free UCLs

95% CLT UCL	3.269	95% Jackknife UCL	3.278
95% Standard Bootstrap UCL	3.265	95% Bootstrap-t UCL	3.265
95% Hall's Bootstrap UCL	3.252	95% Percentile Bootstrap UCL	3.262
95% BCA Bootstrap UCL	3.253		
90% Chebyshev(Mean, Sd) UCL	3.328	95% Chebyshev(Mean, Sd) UCL	3.387
97.5% Chebyshev(Mean, Sd) UCL	3.468	99% Chebyshev(Mean, Sd) UCL	3.629

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.975	Mean	3.332
Maximum	4.11	Median	3.265
SD	0.348	Std. Error of Mean	0.116
Coefficient of Variation	0.105	Skewness	1.548
Mean of logged Data	1.199	SD of logged Data	0.0992

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.548	95% Adjusted-CLT UCL (Chen-1995)	3.587
		95% Modified-t UCL (Johnson-1978)	3.557

Nonparametric Distribution Free UCLs

95% CLT UCL	3.523	95% Jackknife UCL	3.548
95% Standard Bootstrap UCL	3.509	95% Bootstrap-t UCL	3.745
95% Hall's Bootstrap UCL	4.756	95% Percentile Bootstrap UCL	3.521
95% BCA Bootstrap UCL	3.584		
90% Chebyshev(Mean, Sd) UCL	3.68	95% Chebyshev(Mean, Sd) UCL	3.838
97.5% Chebyshev(Mean, Sd) UCL	4.057	99% Chebyshev(Mean, Sd) UCL	4.487

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:20:22 AM
From File	40005K_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.85	Mean	13.11
Maximum	15.2	Median	13.9
SD	1.957	Std. Error of Mean	0.652
Coefficient of Variation	0.149	Skewness	-0.933
Mean of logged Data	2.562	SD of logged Data	0.16

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.32	95% Adjusted-CLT UCL (Chen-1995)	13.96
		95% Modified-t UCL (Johnson-1978)	14.29

Nonparametric Distribution Free UCLs

95% CLT UCL	14.18	95% Jackknife UCL	14.32
95% Standard Bootstrap UCL	14.12	95% Bootstrap-t UCL	14.15
95% Hall's Bootstrap UCL	13.95	95% Percentile Bootstrap UCL	14.07
95% BCA Bootstrap UCL	13.94		
90% Chebyshev(Mean, Sd) UCL	15.06	95% Chebyshev(Mean, Sd) UCL	15.95
97.5% Chebyshev(Mean, Sd) UCL	17.18	99% Chebyshev(Mean, Sd) UCL	19.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.83	Mean	9.961
Maximum	11.7	Median	10.2
SD	1.428	Std. Error of Mean	0.476
Coefficient of Variation	0.143	Skewness	-1.213

Mean of logged Data	2.288	SD of logged Data	0.158

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.85	95% Adjusted-CLT UCL (Chen-1995)	10.54
		95% Modified-t UCL (Johnson-1978)	10.81

Nonparametric Distribution Free UCLs

95% CLT UCL	10.74	95% Jackknife UCL	10.85
95% Standard Bootstrap UCL	10.68	95% Bootstrap-t UCL	10.68
95% Hall's Bootstrap UCL	10.62	95% Percentile Bootstrap UCL	10.65
95% BCA Bootstrap UCL	10.57		
90% Chebyshev(Mean, Sd) UCL	11.39	95% Chebyshev(Mean, Sd) UCL	12.04
97.5% Chebyshev(Mean, Sd) UCL	12.93	99% Chebyshev(Mean, Sd) UCL	14.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	38.2	Mean	45.78
Maximum	51	Median	46.8
SD	4.111	Std. Error of Mean	1.37
Coefficient of Variation	0.0898	Skewness	-1.039
Mean of logged Data	3.82	SD of logged Data	0.0937

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.33	95% Adjusted-CLT UCL (Chen-1995)	47.52
		95% Modified-t UCL (Johnson-1978)	48.25

Nonparametric Distribution Free UCLs

95% CLT UCL	48.03	95% Jackknife UCL	48.33
95% Standard Bootstrap UCL	47.87	95% Bootstrap-t UCL	47.8
95% Hall's Bootstrap UCL	47.53	95% Percentile Bootstrap UCL	47.77
95% BCA Bootstrap UCL	47.64		

90% Chebyshev(Mean, Sd) UCL	49.89	95% Chebyshev(Mean, Sd) UCL	51.75
97.5% Chebyshev(Mean, Sd) UCL	54.34	99% Chebyshev(Mean, Sd) UCL	59.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.36	Mean	6.67
Maximum	45	Median	1.94
SD	14.38	Std. Error of Mean	4.792
Coefficient of Variation	2.155	Skewness	2.999
Mean of logged Data	0.978	SD of logged Data	1.068

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.58	95% Adjusted-CLT UCL (Chen-1995)	19.67
		95% Modified-t UCL (Johnson-1978)	16.38

Nonparametric Distribution Free UCLs

95% CLT UCL	14.55	95% Jackknife UCL	15.58
95% Standard Bootstrap UCL	14.07	95% Bootstrap-t UCL	3959
95% Hall's Bootstrap UCL	2168	95% Percentile Bootstrap UCL	16.23
95% BCA Bootstrap UCL	20.95		
90% Chebyshev(Mean, Sd) UCL	21.05	95% Chebyshev(Mean, Sd) UCL	27.56
97.5% Chebyshev(Mean, Sd) UCL	36.59	99% Chebyshev(Mean, Sd) UCL	54.35

Suggested UCL to Use

95% Hall's Bootstrap UCL 2168

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.51	Mean	1.618
Maximum	10.4	Median	0.52
SD	3.293	Std. Error of Mean	1.098
Coefficient of Variation	2.036	Skewness	3
Mean of logged Data	-0.321	SD of logged Data	0.999

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.659	95% Adjusted-CLT UCL (Chen-1995)	4.596
		95% Modified-t UCL (Johnson-1978)	3.842

Nonparametric Distribution Free UCLs

95% CLT UCL	3.423	95% Jackknife UCL	3.659
95% Standard Bootstrap UCL	3.395	95% Bootstrap-t UCL	746.4
95% Hall's Bootstrap UCL	276.8	95% Percentile Bootstrap UCL	3.813
95% BCA Bootstrap UCL	4.911		
90% Chebyshev(Mean, Sd) UCL	4.911	95% Chebyshev(Mean, Sd) UCL	6.403
97.5% Chebyshev(Mean, Sd) UCL	8.473	99% Chebyshev(Mean, Sd) UCL	12.54

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.403

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.08	Mean	3.567
Maximum	15.2	Median	2.105
SD	4.363	Std. Error of Mean	1.454
Coefficient of Variation	1.223	Skewness	3
Mean of logged Data	0.967	SD of logged Data	0.658

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.271	95% Adjusted-CLT UCL (Chen-1995)	7.512
		95% Modified-t UCL (Johnson-1978)	6.513

Nonparametric Distribution Free UCLs

95% CLT UCL	5.959	95% Jackknife UCL	6.271

95% Standard Bootstrap UCL	5.815	95% Bootstrap-t UCL	421.6
95% Hall's Bootstrap UCL	196.1	95% Percentile Bootstrap UCL	6.468
95% BCA Bootstrap UCL	7.924		
90% Chebyshev(Mean, Sd) UCL	7.929	95% Chebyshev(Mean, Sd) UCL	9.905
97.5% Chebyshev(Mean, Sd) UCL	12.65	99% Chebyshev(Mean, Sd) UCL	18.04

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.905

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.68	Mean	25.17
Maximum	210	Median	2.105
SD	69.31	Std. Error of Mean	23.1
Coefficient of Variation	2.754	Skewness	3
Mean of logged Data	1.235	SD of logged Data	1.545

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	68.13	95% Adjusted-CLT UCL (Chen-1995)	87.86
		95% Modified-t UCL (Johnson-1978)	71.98

Nonparametric Distribution Free UCLs

95% CLT UCL	63.17	95% Jackknife UCL	68.13
95% Standard Bootstrap UCL	61.29	95% Bootstrap-t UCL	11061
95% Hall's Bootstrap UCL	8041	95% Percentile Bootstrap UCL	71.37
95% BCA Bootstrap UCL	94.47		
90% Chebyshev(Mean, Sd) UCL	94.48	95% Chebyshev(Mean, Sd) UCL	125.9
97.5% Chebyshev(Mean, Sd) UCL	169.5	99% Chebyshev(Mean, Sd) UCL	255.1

Suggested UCL to Use

95% Hall's Bootstrap UCL	8041

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2	Mean	2.1
Maximum	2.155	Median	2.105
SD	0.0433	Std. Error of Mean	0.0144
Coefficient of Variation	0.0206	Skewness	-1.581
Mean of logged Data	0.742	SD of logged Data	0.0209

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.127	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.126

Nonparametric Distribution Free UCLs

95% CLT UCL	2.124	95% Jackknife UCL	2.127
95% Standard Bootstrap UCL	2.122	95% Bootstrap-t UCL	2.119
95% Hall's Bootstrap UCL	2.118	95% Percentile Bootstrap UCL	2.12
95% BCA Bootstrap UCL	2.117		
90% Chebyshev(Mean, Sd) UCL	2.143	95% Chebyshev(Mean, Sd) UCL	2.163
97.5% Chebyshev(Mean, Sd) UCL	2.19	99% Chebyshev(Mean, Sd) UCL	2.244

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.075	Mean	3.486
Maximum	4.84	Median	3.24
SD	0.575	Std. Error of Mean	0.192
Coefficient of Variation	0.165	Skewness	2.092
Mean of logged Data	1.238	SD of logged Data	0.148

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.842	95% Adjusted-CLT UCL (Chen-1995)	3.943
		95% Modified-t UCL (Johnson-1978)	3.864

Nonparametric Distribution Free UCLs

95% CLT UCL	3.801	95% Jackknife UCL	3.842
95% Standard Bootstrap UCL	3.786	95% Bootstrap-t UCL	5.846
95% Hall's Bootstrap UCL	6.899	95% Percentile Bootstrap UCL	3.824
95% BCA Bootstrap UCL	3.928		
90% Chebyshev(Mean, Sd) UCL	4.06	95% Chebyshev(Mean, Sd) UCL	4.32
97.5% Chebyshev(Mean, Sd) UCL	4.682	99% Chebyshev(Mean, Sd) UCL	5.391

Suggested UCL to Use

95% Student's-t UCL	3.842	or 95% Modified-t UCL	3.864

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.075	Mean	3.23
Maximum	3.315	Median	3.235
SD	0.067	Std. Error of Mean	0.0223
Coefficient of Variation	0.0207	Skewness	-1.593
Mean of logged Data	1.172	SD of logged Data	0.021

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.272	95% Adjusted-CLT UCL (Chen-1995)	3.254
		95% Modified-t UCL (Johnson-1978)	3.27

Nonparametric Distribution Free UCLs

95% CLT UCL	3.267	95% Jackknife UCL	3.272
95% Standard Bootstrap UCL	3.264	95% Bootstrap-t UCL	3.261
95% Hall's Bootstrap UCL	3.259	95% Percentile Bootstrap UCL	3.262
95% BCA Bootstrap UCL	3.257		
90% Chebyshev(Mean, Sd) UCL	3.297	95% Chebyshev(Mean, Sd) UCL	3.327
97.5% Chebyshev(Mean, Sd) UCL	3.369	99% Chebyshev(Mean, Sd) UCL	3.452

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2	Mean	2.35
Maximum	4.21	Median	2.105
SD	0.702	Std. Error of Mean	0.234
Coefficient of Variation	0.299	Skewness	2.93
Mean of logged Data	0.826	SD of logged Data	0.232

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.785	95% Adjusted-CLT UCL (Chen-1995)	2.979
		95% Modified-t UCL (Johnson-1978)	2.823

Nonparametric Distribution Free UCLs

95% CLT UCL	2.735	95% Jackknife UCL	2.785
95% Standard Bootstrap UCL	2.711	95% Bootstrap-t UCL	6.987
95% Hall's Bootstrap UCL	7.007	95% Percentile Bootstrap UCL	2.811
95% BCA Bootstrap UCL	3.037		
90% Chebyshev(Mean, Sd) UCL	3.052	95% Chebyshev(Mean, Sd) UCL	3.37
97.5% Chebyshev(Mean, Sd) UCL	3.811	99% Chebyshev(Mean, Sd) UCL	4.678

Suggested UCL to Use

95% Student's-t UCL	2.785	or 95% Modified-t UCL	2.823

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.08	Mean	2.75
Maximum	4.88	Median	2.125
SD	1.043	Std. Error of Mean	0.348
Coefficient of Variation	0.379	Skewness	1.393
Mean of logged Data	0.958	SD of logged Data	0.333

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.397	95% Adjusted-CLT UCL (Chen-1995)	3.494
		95% Modified-t UCL (Johnson-1978)	3.423

Nonparametric Distribution Free UCLs

95% CLT UCL	3.322	95% Jackknife UCL	3.397
95% Standard Bootstrap UCL	3.297	95% Bootstrap-t UCL	4.072
95% Hall's Bootstrap UCL	3.233	95% Percentile Bootstrap UCL	3.324
95% BCA Bootstrap UCL	3.501		
90% Chebyshev(Mean, Sd) UCL	3.793	95% Chebyshev(Mean, Sd) UCL	4.266
97.5% Chebyshev(Mean, Sd) UCL	4.921	99% Chebyshev(Mean, Sd) UCL	6.21

Suggested UCL to Use

95% Student's-t UCL	3.397	or 95% Modified-t UCL	3.423

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.075	Mean	3.23
Maximum	3.315	Median	3.235
SD	0.067	Std. Error of Mean	0.0223
Coefficient of Variation	0.0207	Skewness	-1.593
Mean of logged Data	1.172	SD of logged Data	0.021

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.272	95% Adjusted-CLT UCL (Chen-1995)	3.254
		95% Modified-t UCL (Johnson-1978)	3.27

Nonparametric Distribution Free UCLs

95% CLT UCL	3.267	95% Jackknife UCL	3.272
95% Standard Bootstrap UCL	3.265	95% Bootstrap-t UCL	3.261
95% Hall's Bootstrap UCL	3.258	95% Percentile Bootstrap UCL	3.26
95% BCA Bootstrap UCL	3.255		
90% Chebyshev(Mean, Sd) UCL	3.297	95% Chebyshev(Mean, Sd) UCL	3.327
97.5% Chebyshev(Mean, Sd) UCL	3.369	99% Chebyshev(Mean, Sd) UCL	3.452

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.08	Mean	2.615
Maximum	4.45	Median	2.105
SD	1.01	Std. Error of Mean	0.337
Coefficient of Variation	0.386	Skewness	1.622
Mean of logged Data	0.908	SD of logged Data	0.324

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.241	95% Adjusted-CLT UCL (Chen-1995)	3.363
		95% Modified-t UCL (Johnson-1978)	3.271

Nonparametric Distribution Free UCLs

95% CLT UCL	3.169	95% Jackknife UCL	3.241
95% Standard Bootstrap UCL	3.143	95% Bootstrap-t UCL	37.41
95% Hall's Bootstrap UCL	18.36	95% Percentile Bootstrap UCL	3.134
95% BCA Bootstrap UCL	3.382		
90% Chebyshev(Mean, Sd) UCL	3.625	95% Chebyshev(Mean, Sd) UCL	4.082
97.5% Chebyshev(Mean, Sd) UCL	4.717	99% Chebyshev(Mean, Sd) UCL	5.964

Suggested UCL to Use

95% Student's-t UCL	3.241	or 95% Modified-t UCL	3.271

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.28	Mean	2.321
Maximum	10.5	Median	1.295
SD	3.067	Std. Error of Mean	1.022
Coefficient of Variation	1.321	Skewness	3
Mean of logged Data	0.494	SD of logged Data	0.697

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.222	95% Adjusted-CLT UCL (Chen-1995)	5.095
		95% Modified-t UCL (Johnson-1978)	4.393

Nonparametric Distribution Free UCLs

95% CLT UCL	4.003	95% Jackknife UCL	4.222
95% Standard Bootstrap UCL	3.896	95% Bootstrap-t UCL	327.4
95% Hall's Bootstrap UCL	151.7	95% Percentile Bootstrap UCL	4.363
95% BCA Bootstrap UCL	5.389		
90% Chebyshev(Mean, Sd) UCL	5.388	95% Chebyshev(Mean, Sd) UCL	6.778
97.5% Chebyshev(Mean, Sd) UCL	8.706	99% Chebyshev(Mean, Sd) UCL	12.49

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.778

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.92	Mean	3.186
Maximum	3.275	Median	3.23
SD	0.116	Std. Error of Mean	0.0386
Coefficient of Variation	0.0364	Skewness	-1.908
Mean of logged Data	1.158	SD of logged Data	0.0374

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.258	95% Adjusted-CLT UCL (Chen-1995)	3.223
		95% Modified-t UCL (Johnson-1978)	3.254

Nonparametric Distribution Free UCLs

95% CLT UCL	3.25	95% Jackknife UCL	3.258
95% Standard Bootstrap UCL	3.247	95% Bootstrap-t UCL	3.238
95% Hall's Bootstrap UCL	3.231	95% Percentile Bootstrap UCL	3.241
95% BCA Bootstrap UCL	3.232		
90% Chebyshev(Mean, Sd) UCL	3.302	95% Chebyshev(Mean, Sd) UCL	3.354
97.5% Chebyshev(Mean, Sd) UCL	3.427	99% Chebyshev(Mean, Sd) UCL	3.57

Suggested UCL to Use

95% Student's-t UCL	3.258	or 95% Modified-t UCL	3.254

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.97	Mean	88.81
Maximum	780	Median	1.05
SD	259.2	Std. Error of Mean	86.4
Coefficient of Variation	2.919	Skewness	2.999
Mean of logged Data	1.177	SD of logged Data	2.194

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	249.5	95% Adjusted-CLT UCL (Chen-1995)	323.2
		95% Modified-t UCL (Johnson-1978)	263.9

Nonparametric Distribution Free UCLs

95% CLT UCL	230.9	95% Jackknife UCL	249.5
95% Standard Bootstrap UCL	220.8	95% Bootstrap-t UCL	33831
95% Hall's Bootstrap UCL	20565	95% Percentile Bootstrap UCL	261
95% BCA Bootstrap UCL	348.4		
90% Chebyshev(Mean, Sd) UCL	348	95% Chebyshev(Mean, Sd) UCL	465.4
97.5% Chebyshev(Mean, Sd) UCL	628.4	99% Chebyshev(Mean, Sd) UCL	948.5

Suggested UCL to Use

95% Hall's Bootstrap UCL 20565

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.2	Mean	8.066
Maximum	46.6	Median	3.24
SD	14.45	Std. Error of Mean	4.817
Coefficient of Variation	1.791	Skewness	3
Mean of logged Data	1.474	SD of logged Data	0.888

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.02	95% Adjusted-CLT UCL (Chen-1995)	21.14

		95% Modified-t UCL (Johnson-1978)	17.83

Nonparametric Distribution Free UCLs

95% CLT UCL	15.99	95% Jackknife UCL	17.02
95% Standard Bootstrap UCL	15.6	95% Bootstrap-t UCL	3132
95% Hall's Bootstrap UCL	1367	95% Percentile Bootstrap UCL	17.69
95% BCA Bootstrap UCL	22.51		
90% Chebyshev(Mean, Sd) UCL	22.52	95% Chebyshev(Mean, Sd) UCL	29.06
97.5% Chebyshev(Mean, Sd) UCL	38.15	99% Chebyshev(Mean, Sd) UCL	55.99

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	29.06

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.2	Mean	3.483
Maximum	4.51	Median	3.27
SD	0.461	Std. Error of Mean	0.154
Coefficient of Variation	0.132	Skewness	1.875
Mean of logged Data	1.241	SD of logged Data	0.122

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.768	95% Adjusted-CLT UCL (Chen-1995)	3.838
		95% Modified-t UCL (Johnson-1978)	3.784

Nonparametric Distribution Free UCLs

95% CLT UCL	3.735	95% Jackknife UCL	3.768
95% Standard Bootstrap UCL	3.72	95% Bootstrap-t UCL	5.375
95% Hall's Bootstrap UCL	5.357	95% Percentile Bootstrap UCL	3.735
95% BCA Bootstrap UCL	3.797		
90% Chebyshev(Mean, Sd) UCL	3.944	95% Chebyshev(Mean, Sd) UCL	4.152
97.5% Chebyshev(Mean, Sd) UCL	4.442	99% Chebyshev(Mean, Sd) UCL	5.011

Suggested UCL to Use

95% Student's-t UCL	3.768	or 95% Modified-t UCL	3.784

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:21:30 AM
From File	40005L_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.6	Mean	12.38
Maximum	14.5	Median	12.3
SD	1.276	Std. Error of Mean	0.425
Coefficient of Variation	0.103	Skewness	0.328
Mean of logged Data	2.511	SD of logged Data	0.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.17	95% Adjusted-CLT UCL (Chen-1995)	13.13
		95% Modified-t UCL (Johnson-1978)	13.18

Nonparametric Distribution Free UCLs

95% CLT UCL	13.08	95% Jackknife UCL	13.17
95% Standard Bootstrap UCL	13.02	95% Bootstrap-t UCL	13.3
95% Hall's Bootstrap UCL	13.21	95% Percentile Bootstrap UCL	13.07
95% BCA Bootstrap UCL	13.12		
90% Chebyshev(Mean, Sd) UCL	13.65	95% Chebyshev(Mean, Sd) UCL	14.23
97.5% Chebyshev(Mean, Sd) UCL	15.03	99% Chebyshev(Mean, Sd) UCL	16.61

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.1	Mean	12.98
Maximum	14.4	Median	13.5
SD	1.336	Std. Error of Mean	0.445
Coefficient of Variation	0.103	Skewness	-1.446
Mean of logged Data	2.558	SD of logged Data	0.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.81	95% Adjusted-CLT UCL (Chen-1995)	13.48
		95% Modified-t UCL (Johnson-1978)	13.77

Nonparametric Distribution Free UCLs

95% CLT UCL	13.71	95% Jackknife UCL	13.81
95% Standard Bootstrap UCL	13.67	95% Bootstrap-t UCL	13.62
95% Hall's Bootstrap UCL	13.51	95% Percentile Bootstrap UCL	13.62
95% BCA Bootstrap UCL	13.5		
90% Chebyshev(Mean, Sd) UCL	14.31	95% Chebyshev(Mean, Sd) UCL	14.92
97.5% Chebyshev(Mean, Sd) UCL	15.76	99% Chebyshev(Mean, Sd) UCL	17.41

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	42.2	Mean	49.63
Maximum	66.7	Median	47.7
SD	7.963	Std. Error of Mean	2.654
Coefficient of Variation	0.16	Skewness	1.552
Mean of logged Data	3.894	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.57	95% Adjusted-CLT UCL (Chen-1995)	55.47
		95% Modified-t UCL (Johnson-1978)	54.8

Nonparametric Distribution Free UCLs

95% CLT UCL	54	95% Jackknife UCL	54.57
95% Standard Bootstrap UCL	53.89	95% Bootstrap-t UCL	62.21
95% Hall's Bootstrap UCL	83.65	95% Percentile Bootstrap UCL	53.91
95% BCA Bootstrap UCL	55.18		
90% Chebyshev(Mean, Sd) UCL	57.6	95% Chebyshev(Mean, Sd) UCL	61.2
97.5% Chebyshev(Mean, Sd) UCL	66.21	99% Chebyshev(Mean, Sd) UCL	76.04

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.8	Mean	1.773
Maximum	2	Median	1.88
SD	0.373	Std. Error of Mean	0.124
Coefficient of Variation	0.21	Skewness	-2.772
Mean of logged Data	0.543	SD of logged Data	0.29

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.004	95% Adjusted-CLT UCL (Chen-1995)	1.855
		95% Modified-t UCL (Johnson-1978)	1.985

Nonparametric Distribution Free UCLs

95% CLT UCL	1.978	95% Jackknife UCL	2.004
95% Standard Bootstrap UCL	1.967	95% Bootstrap-t UCL	1.926
95% Hall's Bootstrap UCL	1.896	95% Percentile Bootstrap UCL	1.922
95% BCA Bootstrap UCL	1.909		
90% Chebyshev(Mean, Sd) UCL	2.146	95% Chebyshev(Mean, Sd) UCL	2.315
97.5% Chebyshev(Mean, Sd) UCL	2.549	99% Chebyshev(Mean, Sd) UCL	3.009

Suggested UCL to Use

95% Student's-t UCL	2.004	or 95% Modified-t UCL	1.985

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.473	Mean	0.502
Maximum	0.535	Median	0.5
SD	0.0226	Std. Error of Mean	0.00753

Coefficient of Variation	0.045	Skewness	0.0709
Mean of logged Data	-0.691	SD of logged Data	0.045

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.516	95% Adjusted-CLT UCL (Chen-1995)	0.514
		95% Modified-t UCL (Johnson-1978)	0.516

Nonparametric Distribution Free UCLs

95% CLT UCL	0.514	95% Jackknife UCL	0.516
95% Standard Bootstrap UCL	0.513	95% Bootstrap-t UCL	0.515
95% Hall's Bootstrap UCL	0.513	95% Percentile Bootstrap UCL	0.513
95% BCA Bootstrap UCL	0.514		
90% Chebyshev(Mean, Sd) UCL	0.524	95% Chebyshev(Mean, Sd) UCL	0.534
97.5% Chebyshev(Mean, Sd) UCL	0.549	99% Chebyshev(Mean, Sd) UCL	0.577

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.92	Mean	2.037
Maximum	2.165	Median	2.03
SD	0.0916	Std. Error of Mean	0.0305
Coefficient of Variation	0.0449	Skewness	0.0312
Mean of logged Data	0.711	SD of logged Data	0.045

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.094	95% Adjusted-CLT UCL (Chen-1995)	2.088
		95% Modified-t UCL (Johnson-1978)	2.094

Nonparametric Distribution Free UCLs

95% CLT UCL	2.087	95% Jackknife UCL	2.094
95% Standard Bootstrap UCL	2.084	95% Bootstrap-t UCL	2.093
95% Hall's Bootstrap UCL	2.082	95% Percentile Bootstrap UCL	2.083
95% BCA Bootstrap UCL	2.084		
90% Chebyshev(Mean, Sd) UCL	2.129	95% Chebyshev(Mean, Sd) UCL	2.17
97.5% Chebyshev(Mean, Sd) UCL	2.228	99% Chebyshev(Mean, Sd) UCL	2.341

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	3.036
Maximum	5.13	Median	2.165
SD	1.263	Std. Error of Mean	0.421
Coefficient of Variation	0.416	Skewness	0.893
Mean of logged Data	1.04	SD of logged Data	0.389

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.819	95% Adjusted-CLT UCL (Chen-1995)	3.862
		95% Modified-t UCL (Johnson-1978)	3.839

Nonparametric Distribution Free UCLs

95% CLT UCL	3.728	95% Jackknife UCL	3.819
95% Standard Bootstrap UCL	3.668	95% Bootstrap-t UCL	4.111
95% Hall's Bootstrap UCL	3.858	95% Percentile Bootstrap UCL	3.734
95% BCA Bootstrap UCL	3.837		
90% Chebyshev(Mean, Sd) UCL	4.299	95% Chebyshev(Mean, Sd) UCL	4.871
97.5% Chebyshev(Mean, Sd) UCL	5.665	99% Chebyshev(Mean, Sd) UCL	7.225

Suggested UCL to Use

95% Student's-t UCL	3.819	or 95% Modified-t UCL	3.839

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	3.024
Maximum	5.7	Median	2.165
SD	1.421	Std. Error of Mean	0.474
Coefficient of Variation	0.47	Skewness	1.321
Mean of logged Data	1.024	SD of logged Data	0.41

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.905	95% Adjusted-CLT UCL (Chen-1995)	4.026
		95% Modified-t UCL (Johnson-1978)	3.94

Nonparametric Distribution Free UCLs

95% CLT UCL	3.803	95% Jackknife UCL	3.905
95% Standard Bootstrap UCL	3.767	95% Bootstrap-t UCL	5.294
95% Hall's Bootstrap UCL	4.551	95% Percentile Bootstrap UCL	3.754
95% BCA Bootstrap UCL	3.976		
90% Chebyshev(Mean, Sd) UCL	4.445	95% Chebyshev(Mean, Sd) UCL	5.089
97.5% Chebyshev(Mean, Sd) UCL	5.982	99% Chebyshev(Mean, Sd) UCL	7.737

Suggested UCL to Use

95% Student's-t UCL	3.905	or 95% Modified-t UCL	3.94

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	5.128
Maximum	9.52	Median	3.335
SD	2.795	Std. Error of Mean	0.932
Coefficient of Variation	0.545	Skewness	1.002
Mean of logged Data	1.518	SD of logged Data	0.493

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.861	95% Adjusted-CLT UCL (Chen-1995)	6.994
		95% Modified-t UCL (Johnson-1978)	6.913

Nonparametric Distribution Free UCLs

95% CLT UCL	6.661	95% Jackknife UCL	6.861
95% Standard Bootstrap UCL	6.538	95% Bootstrap-t UCL	7.856
95% Hall's Bootstrap UCL	6.224	95% Percentile Bootstrap UCL	6.672
95% BCA Bootstrap UCL	6.904		
90% Chebyshev(Mean, Sd) UCL	7.924	95% Chebyshev(Mean, Sd) UCL	9.19
97.5% Chebyshev(Mean, Sd) UCL	10.95	99% Chebyshev(Mean, Sd) UCL	14.4

Suggested UCL to Use

95% Student's-t UCL	6.861	or 95% Modified-t UCL	6.913

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.85	Mean	3.408
Maximum	4.27	Median	3.26
SD	0.474	Std. Error of Mean	0.158
Coefficient of Variation	0.139	Skewness	1.121
Mean of logged Data	1.218	SD of logged Data	0.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.702	95% Adjusted-CLT UCL (Chen-1995)	3.732
		95% Modified-t UCL (Johnson-1978)	3.712

Nonparametric Distribution Free UCLs

95% CLT UCL	3.668	95% Jackknife UCL	3.702
95% Standard Bootstrap UCL	3.66	95% Bootstrap-t UCL	4.076
95% Hall's Bootstrap UCL	5.74	95% Percentile Bootstrap UCL	3.674
95% BCA Bootstrap UCL	3.698		
90% Chebyshev(Mean, Sd) UCL	3.883	95% Chebyshev(Mean, Sd) UCL	4.098
97.5% Chebyshev(Mean, Sd) UCL	4.396	99% Chebyshev(Mean, Sd) UCL	4.982

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	2.49
Maximum	3.59	Median	2.165
SD	0.61	Std. Error of Mean	0.203
Coefficient of Variation	0.245	Skewness	1.062
Mean of logged Data	0.888	SD of logged Data	0.228

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.868	95% Adjusted-CLT UCL (Chen-1995)	2.901
		95% Modified-t UCL (Johnson-1978)	2.88

Nonparametric Distribution Free UCLs

95% CLT UCL	2.824	95% Jackknife UCL	2.868
95% Standard Bootstrap UCL	2.808	95% Bootstrap-t UCL	3.081
95% Hall's Bootstrap UCL	2.731	95% Percentile Bootstrap UCL	2.82
95% BCA Bootstrap UCL	2.871		
90% Chebyshev(Mean, Sd) UCL	3.1	95% Chebyshev(Mean, Sd) UCL	3.376
97.5% Chebyshev(Mean, Sd) UCL	3.759	99% Chebyshev(Mean, Sd) UCL	4.512

Suggested UCL to Use

95% Student's-t UCL	2.868	or 95% Modified-t UCL	2.88

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	3.759
Maximum	7.67	Median	2.18
SD	2.297	Std. Error of Mean	0.766
Coefficient of Variation	0.611	Skewness	1.025
Mean of logged Data	1.175	SD of logged Data	0.562

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.183	95% Adjusted-CLT UCL (Chen-1995)	5.298
		95% Modified-t UCL (Johnson-1978)	5.226

Nonparametric Distribution Free UCLs

95% CLT UCL	5.018	95% Jackknife UCL	5.183
95% Standard Bootstrap UCL	4.953	95% Bootstrap-t UCL	6.424
95% Hall's Bootstrap UCL	5.234	95% Percentile Bootstrap UCL	4.98
95% BCA Bootstrap UCL	5.123		
90% Chebyshev(Mean, Sd) UCL	6.056	95% Chebyshev(Mean, Sd) UCL	7.096
97.5% Chebyshev(Mean, Sd) UCL	8.541	99% Chebyshev(Mean, Sd) UCL	11.38

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.096

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.955	Mean	3.155
Maximum	3.335	Median	3.17
SD	0.13	Std. Error of Mean	0.0435
Coefficient of Variation	0.0413	Skewness	-0.314
Mean of logged Data	1.148	SD of logged Data	0.0416

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.236	95% Adjusted-CLT UCL (Chen-1995)	3.222
		95% Modified-t UCL (Johnson-1978)	3.235

Nonparametric Distribution Free UCLs

95% CLT UCL	3.226	95% Jackknife UCL	3.236
95% Standard Bootstrap UCL	3.223	95% Bootstrap-t UCL	3.231
95% Hall's Bootstrap UCL	3.222	95% Percentile Bootstrap UCL	3.222
95% BCA Bootstrap UCL	3.219		
90% Chebyshev(Mean, Sd) UCL	3.285	95% Chebyshev(Mean, Sd) UCL	3.344
97.5% Chebyshev(Mean, Sd) UCL	3.426	99% Chebyshev(Mean, Sd) UCL	3.587

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	4.844
Maximum	10.9	Median	2.88
SD	3.564	Std. Error of Mean	1.188
Coefficient of Variation	0.736	Skewness	0.943
Mean of logged Data	1.347	SD of logged Data	0.707

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.054	95% Adjusted-CLT UCL (Chen-1995)	7.198
		95% Modified-t UCL (Johnson-1978)	7.116

Nonparametric Distribution Free UCLs

95% CLT UCL	6.799	95% Jackknife UCL	7.054
95% Standard Bootstrap UCL	6.721	95% Bootstrap-t UCL	8.453
95% Hall's Bootstrap UCL	6.827	95% Percentile Bootstrap UCL	6.832
95% BCA Bootstrap UCL	6.984		
90% Chebyshev(Mean, Sd) UCL	8.409	95% Chebyshev(Mean, Sd) UCL	10.02
97.5% Chebyshev(Mean, Sd) UCL	12.26	99% Chebyshev(Mean, Sd) UCL	16.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.18	Mean	1.254
Maximum	1.335	Median	1.25
SD	0.0577	Std. Error of Mean	0.0192
Coefficient of Variation	0.046	Skewness	0.0282
Mean of logged Data	0.225	SD of logged Data	0.046

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.29	95% Adjusted-CLT UCL (Chen-1995)	1.286
		95% Modified-t UCL (Johnson-1978)	1.29

Nonparametric Distribution Free UCLs

95% CLT UCL	1.285	95% Jackknife UCL	1.29
95% Standard Bootstrap UCL	1.283	95% Bootstrap-t UCL	1.289
95% Hall's Bootstrap UCL	1.282	95% Percentile Bootstrap UCL	1.283
95% BCA Bootstrap UCL	1.283		
90% Chebyshev(Mean, Sd) UCL	1.312	95% Chebyshev(Mean, Sd) UCL	1.338
97.5% Chebyshev(Mean, Sd) UCL	1.374	99% Chebyshev(Mean, Sd) UCL	1.445

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.92	Mean	3.848
Maximum	6.2	Median	3.335
SD	1.032	Std. Error of Mean	0.344
Coefficient of Variation	0.268	Skewness	1.682
Mean of logged Data	1.32	SD of logged Data	0.239

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.488	95% Adjusted-CLT UCL (Chen-1995)	4.62
		95% Modified-t UCL (Johnson-1978)	4.52

Nonparametric Distribution Free UCLs

95% CLT UCL	4.414	95% Jackknife UCL	4.488
95% Standard Bootstrap UCL	4.378	95% Bootstrap-t UCL	4.966
95% Hall's Bootstrap UCL	6.416	95% Percentile Bootstrap UCL	4.421
95% BCA Bootstrap UCL	4.551		
90% Chebyshev(Mean, Sd) UCL	4.88	95% Chebyshev(Mean, Sd) UCL	5.348
97.5% Chebyshev(Mean, Sd) UCL	5.997	99% Chebyshev(Mean, Sd) UCL	7.271

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.818	Mean	1.39
Maximum	2.46	Median	1.17
SD	0.62	Std. Error of Mean	0.207
Coefficient of Variation	0.446	Skewness	1.037
Mean of logged Data	0.249	SD of logged Data	0.412

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.774	95% Adjusted-CLT UCL (Chen-1995)	1.806

		95% Modified-t UCL (Johnson-1978)	1.786

Nonparametric Distribution Free UCLs

95% CLT UCL	1.729	95% Jackknife UCL	1.774
95% Standard Bootstrap UCL	1.711	95% Bootstrap-t UCL	2.104
95% Hall's Bootstrap UCL	1.911	95% Percentile Bootstrap UCL	1.715
95% BCA Bootstrap UCL	1.74		
90% Chebyshev(Mean, Sd) UCL	2.009	95% Chebyshev(Mean, Sd) UCL	2.29
97.5% Chebyshev(Mean, Sd) UCL	2.68	99% Chebyshev(Mean, Sd) UCL	3.445

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.23	Mean	3.274
Maximum	4.49	Median	3.125
SD	0.683	Std. Error of Mean	0.228
Coefficient of Variation	0.209	Skewness	0.649
Mean of logged Data	1.167	SD of logged Data	0.206

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.697	95% Adjusted-CLT UCL (Chen-1995)	3.701
		95% Modified-t UCL (Johnson-1978)	3.705

Nonparametric Distribution Free UCLs

95% CLT UCL	3.648	95% Jackknife UCL	3.697
95% Standard Bootstrap UCL	3.628	95% Bootstrap-t UCL	3.941
95% Hall's Bootstrap UCL	4.761	95% Percentile Bootstrap UCL	3.638
95% BCA Bootstrap UCL	3.709		
90% Chebyshev(Mean, Sd) UCL	3.957	95% Chebyshev(Mean, Sd) UCL	4.266
97.5% Chebyshev(Mean, Sd) UCL	4.696	99% Chebyshev(Mean, Sd) UCL	5.539

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.85	Mean	5.035
Maximum	10.3	Median	3.335
SD	2.832	Std. Error of Mean	0.944
Coefficient of Variation	0.563	Skewness	1.194
Mean of logged Data	1.496	SD of logged Data	0.498

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.791	95% Adjusted-CLT UCL (Chen-1995)	6.989
		95% Modified-t UCL (Johnson-1978)	6.853

Nonparametric Distribution Free UCLs

95% CLT UCL	6.588	95% Jackknife UCL	6.791
95% Standard Bootstrap UCL	6.508	95% Bootstrap-t UCL	8.512
95% Hall's Bootstrap UCL	6.812	95% Percentile Bootstrap UCL	6.647
95% BCA Bootstrap UCL	6.823		
90% Chebyshev(Mean, Sd) UCL	7.867	95% Chebyshev(Mean, Sd) UCL	9.15
97.5% Chebyshev(Mean, Sd) UCL	10.93	99% Chebyshev(Mean, Sd) UCL	14.43

Suggested UCL to Use

95% Student's-t UCL	6.791	or 95% Modified-t UCL	6.853

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:22:34 AM
From File	40005M_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	11.3	Mean	12.58
Maximum	14.1	Median	12.7
SD	1.021	Std. Error of Mean	0.34
Coefficient of Variation	0.0812	Skewness	-0.202
Mean of logged Data	2.529	SD of logged Data	0.082

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.21	95% Adjusted-CLT UCL (Chen-1995)	13.11
		95% Modified-t UCL (Johnson-1978)	13.21

Nonparametric Distribution Free UCLs

95% CLT UCL	13.14	95% Jackknife UCL	13.21
95% Standard Bootstrap UCL	13.12	95% Bootstrap-t UCL	13.19
95% Hall's Bootstrap UCL	13.07	95% Percentile Bootstrap UCL	13.09
95% BCA Bootstrap UCL	13.09		
90% Chebyshev(Mean, Sd) UCL	13.6	95% Chebyshev(Mean, Sd) UCL	14.06
97.5% Chebyshev(Mean, Sd) UCL	14.7	99% Chebyshev(Mean, Sd) UCL	15.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.1	Mean	9.638
Maximum	10.2	Median	9.64
SD	0.406	Std. Error of Mean	0.135
Coefficient of Variation	0.0421	Skewness	0.273

Mean of logged Data	2.265	SD of logged Data	0.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.89	95% Adjusted-CLT UCL (Chen-1995)	9.874
		95% Modified-t UCL (Johnson-1978)	9.892

Nonparametric Distribution Free UCLs

95% CLT UCL	9.861	95% Jackknife UCL	9.89
95% Standard Bootstrap UCL	9.846	95% Bootstrap-t UCL	9.914
95% Hall's Bootstrap UCL	9.86	95% Percentile Bootstrap UCL	9.852
95% BCA Bootstrap UCL	9.852		
90% Chebyshev(Mean, Sd) UCL	10.04	95% Chebyshev(Mean, Sd) UCL	10.23
97.5% Chebyshev(Mean, Sd) UCL	10.48	99% Chebyshev(Mean, Sd) UCL	10.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	43.7	Mean	45.67
Maximum	48.5	Median	45.6
SD	1.433	Std. Error of Mean	0.478
Coefficient of Variation	0.0314	Skewness	0.69
Mean of logged Data	3.821	SD of logged Data	0.0311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.55	95% Adjusted-CLT UCL (Chen-1995)	46.57
		95% Modified-t UCL (Johnson-1978)	46.57

Nonparametric Distribution Free UCLs

95% CLT UCL	46.45	95% Jackknife UCL	46.55
95% Standard Bootstrap UCL	46.42	95% Bootstrap-t UCL	46.64
95% Hall's Bootstrap UCL	46.88	95% Percentile Bootstrap UCL	46.42
95% BCA Bootstrap UCL	46.53		
90% Chebyshev(Mean, Sd) UCL	47.1	95% Chebyshev(Mean, Sd) UCL	47.75
97.5% Chebyshev(Mean, Sd) UCL	48.65	99% Chebyshev(Mean, Sd) UCL	50.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.86	Mean	3.03
Maximum	5.31	Median	2.77
SD	0.962	Std. Error of Mean	0.321
Coefficient of Variation	0.318	Skewness	1.809
Mean of logged Data	1.071	SD of logged Data	0.283

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.627	95% Adjusted-CLT UCL (Chen-1995)	3.764
		95% Modified-t UCL (Johnson-1978)	3.659

Nonparametric Distribution Free UCLs

95% CLT UCL	3.558	95% Jackknife UCL	3.627
95% Standard Bootstrap UCL	3.521	95% Bootstrap-t UCL	4.1
95% Hall's Bootstrap UCL	6.401	95% Percentile Bootstrap UCL	3.593
95% BCA Bootstrap UCL	3.743		
90% Chebyshev(Mean, Sd) UCL	3.992	95% Chebyshev(Mean, Sd) UCL	4.428
97.5% Chebyshev(Mean, Sd) UCL	5.033	99% Chebyshev(Mean, Sd) UCL	6.222

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.481	Mean	0.502
Maximum	0.525	Median	0.497
SD	0.0152	Std. Error of Mean	0.00506
Coefficient of Variation	0.0303	Skewness	0.344
Mean of logged Data	-0.69	SD of logged Data	0.0302

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.511	95% Adjusted-CLT UCL (Chen-1995)	0.511
		95% Modified-t UCL (Johnson-1978)	0.511

Nonparametric Distribution Free UCLs

95% CLT UCL	0.51	95% Jackknife UCL	0.511
95% Standard Bootstrap UCL	0.51	95% Bootstrap-t UCL	0.513
95% Hall's Bootstrap UCL	0.51	95% Percentile Bootstrap UCL	0.51
95% BCA Bootstrap UCL	0.51		
90% Chebyshev(Mean, Sd) UCL	0.517	95% Chebyshev(Mean, Sd) UCL	0.524
97.5% Chebyshev(Mean, Sd) UCL	0.534	99% Chebyshev(Mean, Sd) UCL	0.552

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.955	Mean	2.037
Maximum	2.14	Median	2.015
SD	0.0616	Std. Error of Mean	0.0205
Coefficient of Variation	0.0302	Skewness	0.479
Mean of logged Data	0.711	SD of logged Data	0.0301

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.075	95% Adjusted-CLT UCL (Chen-1995)	2.075
		95% Modified-t UCL (Johnson-1978)	2.076

Nonparametric Distribution Free UCLs

95% CLT UCL	2.071	95% Jackknife UCL	2.075
95% Standard Bootstrap UCL	2.069	95% Bootstrap-t UCL	2.08
95% Hall's Bootstrap UCL	2.07	95% Percentile Bootstrap UCL	2.069
95% BCA Bootstrap UCL	2.071		
90% Chebyshev(Mean, Sd) UCL	2.099	95% Chebyshev(Mean, Sd) UCL	2.127
97.5% Chebyshev(Mean, Sd) UCL	2.165	99% Chebyshev(Mean, Sd) UCL	2.242

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	3.351
Maximum	10.7	Median	2.085
SD	2.846	Std. Error of Mean	0.949
Coefficient of Variation	0.849	Skewness	2.67
Mean of logged Data	1.021	SD of logged Data	0.567

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.115	95% Adjusted-CLT UCL (Chen-1995)	5.813
		95% Modified-t UCL (Johnson-1978)	5.255

Nonparametric Distribution Free UCLs

95% CLT UCL	4.911	95% Jackknife UCL	5.115
95% Standard Bootstrap UCL	4.838	95% Bootstrap-t UCL	10.19
95% Hall's Bootstrap UCL	10.68	95% Percentile Bootstrap UCL	4.767
95% BCA Bootstrap UCL	6.069		
90% Chebyshev(Mean, Sd) UCL	6.197	95% Chebyshev(Mean, Sd) UCL	7.486
97.5% Chebyshev(Mean, Sd) UCL	9.275	99% Chebyshev(Mean, Sd) UCL	12.79

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.486

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	3.404
Maximum	9.93	Median	2.085
SD	2.636	Std. Error of Mean	0.879
Coefficient of Variation	0.774	Skewness	2.314
Mean of logged Data	1.048	SD of logged Data	0.569

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.038	95% Adjusted-CLT UCL (Chen-1995)	5.573
		95% Modified-t UCL (Johnson-1978)	5.151

Nonparametric Distribution Free UCLs

95% CLT UCL	4.849	95% Jackknife UCL	5.038
95% Standard Bootstrap UCL	4.737	95% Bootstrap-t UCL	7.776
95% Hall's Bootstrap UCL	9.184	95% Percentile Bootstrap UCL	4.911
95% BCA Bootstrap UCL	5.782		
90% Chebyshev(Mean, Sd) UCL	6.04	95% Chebyshev(Mean, Sd) UCL	7.234
97.5% Chebyshev(Mean, Sd) UCL	8.891	99% Chebyshev(Mean, Sd) UCL	12.15

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.234

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.005	Mean	5.599
Maximum	16.2	Median	3.205
SD	4.458	Std. Error of Mean	1.486
Coefficient of Variation	0.796	Skewness	2.034
Mean of logged Data	1.522	SD of logged Data	0.617

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.362	95% Adjusted-CLT UCL (Chen-1995)	9.12
		95% Modified-t UCL (Johnson-1978)	8.53

Nonparametric Distribution Free UCLs

95% CLT UCL	8.043	95% Jackknife UCL	8.362
95% Standard Bootstrap UCL	7.876	95% Bootstrap-t UCL	12.05
95% Hall's Bootstrap UCL	10.18	95% Percentile Bootstrap UCL	8.071
95% BCA Bootstrap UCL	8.973		
90% Chebyshev(Mean, Sd) UCL	10.06	95% Chebyshev(Mean, Sd) UCL	12.08
97.5% Chebyshev(Mean, Sd) UCL	14.88	99% Chebyshev(Mean, Sd) UCL	20.38

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.08

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.005	Mean	3.579
Maximum	6.42	Median	3.205
SD	1.084	Std. Error of Mean	0.361
Coefficient of Variation	0.303	Skewness	2.81
Mean of logged Data	1.245	SD of logged Data	0.238

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.251	95% Adjusted-CLT UCL (Chen-1995)	4.535
		95% Modified-t UCL (Johnson-1978)	4.307

Nonparametric Distribution Free UCLs

95% CLT UCL	4.173	95% Jackknife UCL	4.251
95% Standard Bootstrap UCL	4.123	95% Bootstrap-t UCL	6.661
95% Hall's Bootstrap UCL	6.334	95% Percentile Bootstrap UCL	4.254
95% BCA Bootstrap UCL	4.587		
90% Chebyshev(Mean, Sd) UCL	4.663	95% Chebyshev(Mean, Sd) UCL	5.154
97.5% Chebyshev(Mean, Sd) UCL	5.836	99% Chebyshev(Mean, Sd) UCL	7.175

Suggested UCL to Use

95% Student's-t UCL	4.251	or 95% Modified-t UCL	4.307

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	2.726
Maximum	5.31	Median	2.105
SD	1.164	Std. Error of Mean	0.388
Coefficient of Variation	0.427	Skewness	1.796
Mean of logged Data	0.939	SD of logged Data	0.355

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.447	95% Adjusted-CLT UCL (Chen-1995)	3.612

		95% Modified-t UCL (Johnson-1978)	3.486

Nonparametric Distribution Free UCLs

95% CLT UCL	3.364	95% Jackknife UCL	3.447
95% Standard Bootstrap UCL	3.309	95% Bootstrap-t UCL	5.685
95% Hall's Bootstrap UCL	6.933	95% Percentile Bootstrap UCL	3.361
95% BCA Bootstrap UCL	3.528		
90% Chebyshev(Mean, Sd) UCL	3.89	95% Chebyshev(Mean, Sd) UCL	4.417
97.5% Chebyshev(Mean, Sd) UCL	5.15	99% Chebyshev(Mean, Sd) UCL	6.588

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	3.989
Maximum	12.4	Median	2.085
SD	3.529	Std. Error of Mean	1.176
Coefficient of Variation	0.885	Skewness	2.045
Mean of logged Data	1.136	SD of logged Data	0.684

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.177	95% Adjusted-CLT UCL (Chen-1995)	6.781
		95% Modified-t UCL (Johnson-1978)	6.311

Nonparametric Distribution Free UCLs

95% CLT UCL	5.925	95% Jackknife UCL	6.177
95% Standard Bootstrap UCL	5.788	95% Bootstrap-t UCL	8.835
95% Hall's Bootstrap UCL	10.86	95% Percentile Bootstrap UCL	5.918
95% BCA Bootstrap UCL	6.732		
90% Chebyshev(Mean, Sd) UCL	7.519	95% Chebyshev(Mean, Sd) UCL	9.118
97.5% Chebyshev(Mean, Sd) UCL	11.34	99% Chebyshev(Mean, Sd) UCL	15.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.118

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.005	Mean	3.134
Maximum	3.29	Median	3.1
SD	0.0942	Std. Error of Mean	0.0314
Coefficient of Variation	0.0301	Skewness	0.433
Mean of logged Data	1.142	SD of logged Data	0.0299

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.193	95% Adjusted-CLT UCL (Chen-1995)	3.191
		95% Modified-t UCL (Johnson-1978)	3.194

Nonparametric Distribution Free UCLs

95% CLT UCL	3.186	95% Jackknife UCL	3.193
95% Standard Bootstrap UCL	3.182	95% Bootstrap-t UCL	3.2
95% Hall's Bootstrap UCL	3.189	95% Percentile Bootstrap UCL	3.185
95% BCA Bootstrap UCL	3.186		
90% Chebyshev(Mean, Sd) UCL	3.229	95% Chebyshev(Mean, Sd) UCL	3.271
97.5% Chebyshev(Mean, Sd) UCL	3.331	99% Chebyshev(Mean, Sd) UCL	3.447

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	5.245
Maximum	18.9	Median	2.085
SD	5.749	Std. Error of Mean	1.916
Coefficient of Variation	1.096	Skewness	2.023
Mean of logged Data	1.262	SD of logged Data	0.867

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.808	95% Adjusted-CLT UCL (Chen-1995)	9.778
		95% Modified-t UCL (Johnson-1978)	9.024

Nonparametric Distribution Free UCLs

95% CLT UCL	8.397	95% Jackknife UCL	8.808

95% Standard Bootstrap UCL	8.165	95% Bootstrap-t UCL	12.84
95% Hall's Bootstrap UCL	11.14	95% Percentile Bootstrap UCL	8.356
95% BCA Bootstrap UCL	9.629		
90% Chebyshev(Mean, Sd) UCL	10.99	95% Chebyshev(Mean, Sd) UCL	13.6
97.5% Chebyshev(Mean, Sd) UCL	17.21	99% Chebyshev(Mean, Sd) UCL	24.31

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.2	Mean	1.399
Maximum	2.63	Median	1.24
SD	0.462	Std. Error of Mean	0.154
Coefficient of Variation	0.33	Skewness	2.976
Mean of logged Data	0.302	SD of logged Data	0.25

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.686	95% Adjusted-CLT UCL (Chen-1995)	1.816
		95% Modified-t UCL (Johnson-1978)	1.712

Nonparametric Distribution Free UCLs

95% CLT UCL	1.653	95% Jackknife UCL	1.686
95% Standard Bootstrap UCL	1.64	95% Bootstrap-t UCL	4.528
95% Hall's Bootstrap UCL	3.323	95% Percentile Bootstrap UCL	1.701
95% BCA Bootstrap UCL	1.856		
90% Chebyshev(Mean, Sd) UCL	1.862	95% Chebyshev(Mean, Sd) UCL	2.071
97.5% Chebyshev(Mean, Sd) UCL	2.362	99% Chebyshev(Mean, Sd) UCL	2.933

Suggested UCL to Use

95% Student's-t UCL	1.686	or 95% Modified-t UCL	1.712

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.005	Mean	3.632
Maximum	7	Median	3.205

SD	1.276	Std. Error of Mean	0.425
Coefficient of Variation	0.351	Skewness	2.888
Mean of logged Data	1.252	SD of logged Data	0.266

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.423	95% Adjusted-CLT UCL (Chen-1995)	4.769
		95% Modified-t UCL (Johnson-1978)	4.491

Nonparametric Distribution Free UCLs

95% CLT UCL	4.332	95% Jackknife UCL	4.423
95% Standard Bootstrap UCL	4.29	95% Bootstrap-t UCL	8.183
95% Hall's Bootstrap UCL	7.12	95% Percentile Bootstrap UCL	4.449
95% BCA Bootstrap UCL	4.557		
90% Chebyshev(Mean, Sd) UCL	4.908	95% Chebyshev(Mean, Sd) UCL	5.486
97.5% Chebyshev(Mean, Sd) UCL	6.288	99% Chebyshev(Mean, Sd) UCL	7.863

Suggested UCL to Use

95% Student's-t UCL	4.423	or 95% Modified-t UCL	4.491

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.93	Mean	10.92
Maximum	52.1	Median	6.4
SD	15.57	Std. Error of Mean	5.189
Coefficient of Variation	1.425	Skewness	2.903
Mean of logged Data	1.877	SD of logged Data	1.014

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.57	95% Adjusted-CLT UCL (Chen-1995)	24.82
		95% Modified-t UCL (Johnson-1978)	21.41

Nonparametric Distribution Free UCLs

95% CLT UCL	19.46	95% Jackknife UCL	20.57
95% Standard Bootstrap UCL	19	95% Bootstrap-t UCL	101
95% Hall's Bootstrap UCL	81.46	95% Percentile Bootstrap UCL	21.01
95% BCA Bootstrap UCL	21.93		
90% Chebyshev(Mean, Sd) UCL	26.49	95% Chebyshev(Mean, Sd) UCL	33.54

97.5% Chebyshev(Mean, Sd) UCL	43.33	99% Chebyshev(Mean, Sd) UCL	62.55

Suggested UCL to Use

95% Hall's Bootstrap UCL	81.46

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.24	Mean	3.451
Maximum	6.67	Median	3.205
SD	1.248	Std. Error of Mean	0.416
Coefficient of Variation	0.362	Skewness	2.592
Mean of logged Data	1.196	SD of logged Data	0.288

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.225	95% Adjusted-CLT UCL (Chen-1995)	4.52
		95% Modified-t UCL (Johnson-1978)	4.285

Nonparametric Distribution Free UCLs

95% CLT UCL	4.135	95% Jackknife UCL	4.225
95% Standard Bootstrap UCL	4.118	95% Bootstrap-t UCL	7.549
95% Hall's Bootstrap UCL	8.183	95% Percentile Bootstrap UCL	4.236
95% BCA Bootstrap UCL	4.619		
90% Chebyshev(Mean, Sd) UCL	4.699	95% Chebyshev(Mean, Sd) UCL	5.265
97.5% Chebyshev(Mean, Sd) UCL	6.049	99% Chebyshev(Mean, Sd) UCL	7.591

Suggested UCL to Use

95% Student's-t UCL	4.225	or 95% Modified-t UCL	4.285

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.005	Mean	5.778
Maximum	18.7	Median	3.205

SD	5.174	Std. Error of Mean	1.725
Coefficient of Variation	0.896	Skewness	2.38
Mean of logged Data	1.525	SD of logged Data	0.643

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.985	95% Adjusted-CLT UCL (Chen-1995)	10.08
		95% Modified-t UCL (Johnson-1978)	9.213

Nonparametric Distribution Free UCLs

95% CLT UCL	8.615	95% Jackknife UCL	8.985
95% Standard Bootstrap UCL	8.383	95% Bootstrap-t UCL	14.17
95% Hall's Bootstrap UCL	16.83	95% Percentile Bootstrap UCL	8.779
95% BCA Bootstrap UCL	10.51		
90% Chebyshev(Mean, Sd) UCL	10.95	95% Chebyshev(Mean, Sd) UCL	13.3
97.5% Chebyshev(Mean, Sd) UCL	16.55	99% Chebyshev(Mean, Sd) UCL	22.94

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:23:38 AM
From File	40005N_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.5	Mean	12.02
Maximum	13.6	Median	12
SD	1.053	Std. Error of Mean	0.351
Coefficient of Variation	0.0876	Skewness	0.0748
Mean of logged Data	2.483	SD of logged Data	0.0878

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.68	95% Adjusted-CLT UCL (Chen-1995)	12.61
		95% Modified-t UCL (Johnson-1978)	12.68

Nonparametric Distribution Free UCLs

95% CLT UCL	12.6	95% Jackknife UCL	12.68
95% Standard Bootstrap UCL	12.57	95% Bootstrap-t UCL	12.71
95% Hall's Bootstrap UCL	12.59	95% Percentile Bootstrap UCL	12.57
95% BCA Bootstrap UCL	12.58		
90% Chebyshev(Mean, Sd) UCL	13.08	95% Chebyshev(Mean, Sd) UCL	13.55
97.5% Chebyshev(Mean, Sd) UCL	14.21	99% Chebyshev(Mean, Sd) UCL	15.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.45	Mean	10.35
Maximum	11.2	Median	10.4
SD	0.612	Std. Error of Mean	0.204
Coefficient of Variation	0.0591	Skewness	-0.0964
Mean of logged Data	2.335	SD of logged Data	0.0594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.73	95% Adjusted-CLT UCL (Chen-1995)	10.68
		95% Modified-t UCL (Johnson-1978)	10.72

Nonparametric Distribution Free UCLs

95% CLT UCL	10.68	95% Jackknife UCL	10.73
95% Standard Bootstrap UCL	10.66	95% Bootstrap-t UCL	10.75
95% Hall's Bootstrap UCL	10.69	95% Percentile Bootstrap UCL	10.66
95% BCA Bootstrap UCL	10.66		
90% Chebyshev(Mean, Sd) UCL	10.96	95% Chebyshev(Mean, Sd) UCL	11.24
97.5% Chebyshev(Mean, Sd) UCL	11.62	99% Chebyshev(Mean, Sd) UCL	12.38

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	41.7	Mean	45.74
Maximum	49.9	Median	45.7
SD	2.694	Std. Error of Mean	0.898
Coefficient of Variation	0.0589	Skewness	0.0293
Mean of logged Data	3.822	SD of logged Data	0.059

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.41	95% Adjusted-CLT UCL (Chen-1995)	47.23
		95% Modified-t UCL (Johnson-1978)	47.42

Nonparametric Distribution Free UCLs

95% CLT UCL	47.22	95% Jackknife UCL	47.41
95% Standard Bootstrap UCL	47.17	95% Bootstrap-t UCL	47.44
95% Hall's Bootstrap UCL	47.27	95% Percentile Bootstrap UCL	47.19
95% BCA Bootstrap UCL	47.23		
90% Chebyshev(Mean, Sd) UCL	48.44	95% Chebyshev(Mean, Sd) UCL	49.66
97.5% Chebyshev(Mean, Sd) UCL	51.35	99% Chebyshev(Mean, Sd) UCL	54.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.51	Mean	3.132
Maximum	3.56	Median	3.21
SD	0.329	Std. Error of Mean	0.11
Coefficient of Variation	0.105	Skewness	-0.953
Mean of logged Data	1.136	SD of logged Data	0.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.336	95% Adjusted-CLT UCL (Chen-1995)	3.276
		95% Modified-t UCL (Johnson-1978)	3.331

Nonparametric Distribution Free UCLs

95% CLT UCL	3.313	95% Jackknife UCL	3.336
95% Standard Bootstrap UCL	3.306	95% Bootstrap-t UCL	3.299
95% Hall's Bootstrap UCL	3.281	95% Percentile Bootstrap UCL	3.299
95% BCA Bootstrap UCL	3.271		
90% Chebyshev(Mean, Sd) UCL	3.462	95% Chebyshev(Mean, Sd) UCL	3.611
97.5% Chebyshev(Mean, Sd) UCL	3.818	99% Chebyshev(Mean, Sd) UCL	4.225

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.315	Mean	1.426
Maximum	7.39	Median	0.517
SD	2.3	Std. Error of Mean	0.767
Coefficient of Variation	1.613	Skewness	2.726
Mean of logged Data	-0.279	SD of logged Data	0.998

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.852	95% Adjusted-CLT UCL (Chen-1995)	3.431
		95% Modified-t UCL (Johnson-1978)	2.968

Nonparametric Distribution Free UCLs

95% CLT UCL	2.687	95% Jackknife UCL	2.852
95% Standard Bootstrap UCL	2.612	95% Bootstrap-t UCL	33.84
95% Hall's Bootstrap UCL	36.67	95% Percentile Bootstrap UCL	2.794
95% BCA Bootstrap UCL	3.521		
90% Chebyshev(Mean, Sd) UCL	3.726	95% Chebyshev(Mean, Sd) UCL	4.768
97.5% Chebyshev(Mean, Sd) UCL	6.214	99% Chebyshev(Mean, Sd) UCL	9.054

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.768

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	4.824
Maximum	17.3	Median	2.12
SD	5.662	Std. Error of Mean	1.887
Coefficient of Variation	1.174	Skewness	1.876
Mean of logged Data	1.151	SD of logged Data	0.859

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.334	95% Adjusted-CLT UCL (Chen-1995)	9.189
		95% Modified-t UCL (Johnson-1978)	8.53

Nonparametric Distribution Free UCLs

95% CLT UCL	7.928	95% Jackknife UCL	8.334
95% Standard Bootstrap UCL	7.743	95% Bootstrap-t UCL	221.6
95% Hall's Bootstrap UCL	120.6	95% Percentile Bootstrap UCL	8.173
95% BCA Bootstrap UCL	8.818		
90% Chebyshev(Mean, Sd) UCL	10.49	95% Chebyshev(Mean, Sd) UCL	13.05
97.5% Chebyshev(Mean, Sd) UCL	16.61	99% Chebyshev(Mean, Sd) UCL	23.6

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.05

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	15.78
Maximum	66.5	Median	2.145
SD	25.41	Std. Error of Mean	8.47
Coefficient of Variation	1.611	Skewness	1.669
Mean of logged Data	1.69	SD of logged Data	1.432

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.53	95% Adjusted-CLT UCL (Chen-1995)	34.75
		95% Modified-t UCL (Johnson-1978)	32.31

Nonparametric Distribution Free UCLs

95% CLT UCL	29.71	95% Jackknife UCL	31.53
95% Standard Bootstrap UCL	29.24	95% Bootstrap-t UCL	204
95% Hall's Bootstrap UCL	180.4	95% Percentile Bootstrap UCL	29.82
95% BCA Bootstrap UCL	35.01		
90% Chebyshev(Mean, Sd) UCL	41.19	95% Chebyshev(Mean, Sd) UCL	52.7
97.5% Chebyshev(Mean, Sd) UCL	68.68	99% Chebyshev(Mean, Sd) UCL	100.1

Suggested UCL to Use

95% Hall's Bootstrap UCL	180.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	16.42
Maximum	73.5	Median	2.19
SD	26.52	Std. Error of Mean	8.84
Coefficient of Variation	1.615	Skewness	1.793
Mean of logged Data	1.737	SD of logged Data	1.438

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.86	95% Adjusted-CLT UCL (Chen-1995)	36.61
		95% Modified-t UCL (Johnson-1978)	33.74

Nonparametric Distribution Free UCLs

95% CLT UCL	30.96	95% Jackknife UCL	32.86
95% Standard Bootstrap UCL	30.29	95% Bootstrap-t UCL	166.5
95% Hall's Bootstrap UCL	165.7	95% Percentile Bootstrap UCL	31.55
95% BCA Bootstrap UCL	35.79		
90% Chebyshev(Mean, Sd) UCL	42.94	95% Chebyshev(Mean, Sd) UCL	54.95
97.5% Chebyshev(Mean, Sd) UCL	71.63	99% Chebyshev(Mean, Sd) UCL	104.4

Suggested UCL to Use

95% Hall's Bootstrap UCL 165.7

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.68	Mean	22.06
Maximum	95.1	Median	3.3
SD	34.61	Std. Error of Mean	11.54
Coefficient of Variation	1.569	Skewness	1.744
Mean of logged Data	2.099	SD of logged Data	1.394

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.52	95% Adjusted-CLT UCL (Chen-1995)	48.21
		95% Modified-t UCL (Johnson-1978)	44.64

Nonparametric Distribution Free UCLs

95% CLT UCL	41.04	95% Jackknife UCL	43.52
95% Standard Bootstrap UCL	40.05	95% Bootstrap-t UCL	194.6
95% Hall's Bootstrap UCL	196.7	95% Percentile Bootstrap UCL	40.56
95% BCA Bootstrap UCL	47.52		

90% Chebyshev(Mean, Sd) UCL	56.68	95% Chebyshev(Mean, Sd) UCL	72.35
97.5% Chebyshev(Mean, Sd) UCL	94.12	99% Chebyshev(Mean, Sd) UCL	136.9

Suggested UCL to Use

95% Hall's Bootstrap UCL 196.7

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.985	Mean	10.34
Maximum	41.7	Median	3.285
SD	13.92	Std. Error of Mean	4.64
Coefficient of Variation	1.346	Skewness	1.925
Mean of logged Data	1.749	SD of logged Data	1.025

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.97	95% Adjusted-CLT UCL (Chen-1995)	21.16
		95% Modified-t UCL (Johnson-1978)	19.47

Nonparametric Distribution Free UCLs

95% CLT UCL	17.97	95% Jackknife UCL	18.97
95% Standard Bootstrap UCL	17.63	95% Bootstrap-t UCL	91.66
95% Hall's Bootstrap UCL	121.4	95% Percentile Bootstrap UCL	18.47
95% BCA Bootstrap UCL	21.04		
90% Chebyshev(Mean, Sd) UCL	24.26	95% Chebyshev(Mean, Sd) UCL	30.57
97.5% Chebyshev(Mean, Sd) UCL	39.32	99% Chebyshev(Mean, Sd) UCL	56.51

Suggested UCL to Use

95% Hall's Bootstrap UCL 121.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	9.194
Maximum	41.4	Median	2.145
SD	13.86	Std. Error of Mean	4.62
Coefficient of Variation	1.508	Skewness	2.042
Mean of logged Data	1.457	SD of logged Data	1.173

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.78	95% Adjusted-CLT UCL (Chen-1995)	20.15
		95% Modified-t UCL (Johnson-1978)	18.31

Nonparametric Distribution Free UCLs

95% CLT UCL	16.79	95% Jackknife UCL	17.78
95% Standard Bootstrap UCL	16.39	95% Bootstrap-t UCL	87.77
95% Hall's Bootstrap UCL	104.9	95% Percentile Bootstrap UCL	16.25
95% BCA Bootstrap UCL	19.86		
90% Chebyshev(Mean, Sd) UCL	23.05	95% Chebyshev(Mean, Sd) UCL	29.33
97.5% Chebyshev(Mean, Sd) UCL	38.05	99% Chebyshev(Mean, Sd) UCL	55.16

Suggested UCL to Use

95% Hall's Bootstrap UCL 104.9

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.94	Mean	14.84
Maximum	59.3	Median	2.145
SD	22.43	Std. Error of Mean	7.478
Coefficient of Variation	1.511	Skewness	1.621
Mean of logged Data	1.726	SD of logged Data	1.402

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	28.75	95% Adjusted-CLT UCL (Chen-1995)	31.46
		95% Modified-t UCL (Johnson-1978)	29.42

Nonparametric Distribution Free UCLs

95% CLT UCL	27.14	95% Jackknife UCL	28.75
95% Standard Bootstrap UCL	26.65	95% Bootstrap-t UCL	100.8
95% Hall's Bootstrap UCL	126	95% Percentile Bootstrap UCL	27.02
95% BCA Bootstrap UCL	31.38		
90% Chebyshev(Mean, Sd) UCL	37.27	95% Chebyshev(Mean, Sd) UCL	47.44
97.5% Chebyshev(Mean, Sd) UCL	61.54	99% Chebyshev(Mean, Sd) UCL	89.24

Suggested UCL to Use

95% Hall's Bootstrap UCL	126

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.985	Mean	4.733
Maximum	12.7	Median	3.26
SD	3.347	Std. Error of Mean	1.116
Coefficient of Variation	0.707	Skewness	2.165
Mean of logged Data	1.406	SD of logged Data	0.519

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.808	95% Adjusted-CLT UCL (Chen-1995)	7.429
		95% Modified-t UCL (Johnson-1978)	6.942

Nonparametric Distribution Free UCLs

95% CLT UCL	6.568	95% Jackknife UCL	6.808
95% Standard Bootstrap UCL	6.448	95% Bootstrap-t UCL	51.52
95% Hall's Bootstrap UCL	32.47	95% Percentile Bootstrap UCL	6.823
95% BCA Bootstrap UCL	7.37		
90% Chebyshev(Mean, Sd) UCL	8.08	95% Chebyshev(Mean, Sd) UCL	9.596
97.5% Chebyshev(Mean, Sd) UCL	11.7	99% Chebyshev(Mean, Sd) UCL	15.83

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.596

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	16.09
Maximum	91.7	Median	3.41
SD	28.95	Std. Error of Mean	9.649
Coefficient of Variation	1.8	Skewness	2.777
Mean of logged Data	1.829	SD of logged Data	1.342

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.03	95% Adjusted-CLT UCL (Chen-1995)	41.5
		95% Modified-t UCL (Johnson-1978)	35.52

Nonparametric Distribution Free UCLs

95% CLT UCL	31.96	95% Jackknife UCL	34.03
95% Standard Bootstrap UCL	30.78	95% Bootstrap-t UCL	91.69
95% Hall's Bootstrap UCL	95.09	95% Percentile Bootstrap UCL	33.83
95% BCA Bootstrap UCL	42.36		
90% Chebyshev(Mean, Sd) UCL	45.03	95% Chebyshev(Mean, Sd) UCL	58.14
97.5% Chebyshev(Mean, Sd) UCL	76.34	99% Chebyshev(Mean, Sd) UCL	112.1

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.195	Mean	1.907
Maximum	6.61	Median	1.305
SD	1.769	Std. Error of Mean	0.59
Coefficient of Variation	0.928	Skewness	2.964
Mean of logged Data	0.452	SD of logged Data	0.548

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	3.004	95% Adjusted-CLT UCL (Chen-1995)	3.5
		95% Modified-t UCL (Johnson-1978)	3.101

Nonparametric Distribution Free UCLs

95% CLT UCL	2.877	95% Jackknife UCL	3.004
95% Standard Bootstrap UCL	2.829	95% Bootstrap-t UCL	27.2
95% Hall's Bootstrap UCL	13.64	95% Percentile Bootstrap UCL	3.051
95% BCA Bootstrap UCL	3.657		
90% Chebyshev(Mean, Sd) UCL	3.677	95% Chebyshev(Mean, Sd) UCL	4.478
97.5% Chebyshev(Mean, Sd) UCL	5.59	99% Chebyshev(Mean, Sd) UCL	7.775

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.478

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.985	Mean	13.69
Maximum	59.3	Median	3.3
SD	20.4	Std. Error of Mean	6.801
Coefficient of Variation	1.49	Skewness	1.907
Mean of logged Data	1.857	SD of logged Data	1.168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.33	95% Adjusted-CLT UCL (Chen-1995)	29.49
		95% Modified-t UCL (Johnson-1978)	27.06

Nonparametric Distribution Free UCLs

95% CLT UCL	24.87	95% Jackknife UCL	26.33
95% Standard Bootstrap UCL	24.13	95% Bootstrap-t UCL	162.8
95% Hall's Bootstrap UCL	211.7	95% Percentile Bootstrap UCL	25.83
95% BCA Bootstrap UCL	30.41		
90% Chebyshev(Mean, Sd) UCL	34.09	95% Chebyshev(Mean, Sd) UCL	43.33
97.5% Chebyshev(Mean, Sd) UCL	56.16	99% Chebyshev(Mean, Sd) UCL	81.36

Suggested UCL to Use

95% Hall's Bootstrap UCL	211.7

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.74	Mean	5.658
Maximum	6.66	Median	6.18
SD	1.252	Std. Error of Mean	0.417
Coefficient of Variation	0.221	Skewness	-1.829
Mean of logged Data	1.703	SD of logged Data	0.281

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.434	95% Adjusted-CLT UCL (Chen-1995)	6.072
		95% Modified-t UCL (Johnson-1978)	6.391

Nonparametric Distribution Free UCLs

95% CLT UCL	6.344	95% Jackknife UCL	6.434
95% Standard Bootstrap UCL	6.275	95% Bootstrap-t UCL	6.227
95% Hall's Bootstrap UCL	6.142	95% Percentile Bootstrap UCL	6.231
95% BCA Bootstrap UCL	6.114		
90% Chebyshev(Mean, Sd) UCL	6.91	95% Chebyshev(Mean, Sd) UCL	7.477
97.5% Chebyshev(Mean, Sd) UCL	8.264	99% Chebyshev(Mean, Sd) UCL	9.81

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.985	Mean	17.6
Maximum	86.1	Median	3.3
SD	29.02	Std. Error of Mean	9.675
Coefficient of Variation	1.65	Skewness	2.122
Mean of logged Data	1.947	SD of logged Data	1.278

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.59	95% Adjusted-CLT UCL (Chen-1995)	40.82
		95% Modified-t UCL (Johnson-1978)	36.73

Nonparametric Distribution Free UCLs

95% CLT UCL	33.51	95% Jackknife UCL	35.59
95% Standard Bootstrap UCL	32.34	95% Bootstrap-t UCL	313.1
95% Hall's Bootstrap UCL	252.4	95% Percentile Bootstrap UCL	35.39
95% BCA Bootstrap UCL	40.18		
90% Chebyshev(Mean, Sd) UCL	46.62	95% Chebyshev(Mean, Sd) UCL	59.77
97.5% Chebyshev(Mean, Sd) UCL	78.01	99% Chebyshev(Mean, Sd) UCL	113.9

Suggested UCL to Use

95% Hall's Bootstrap UCL	252.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.985	Mean	24.49
Maximum	96.8	Median	3.3
SD	37.21	Std. Error of Mean	12.4
Coefficient of Variation	1.519	Skewness	1.606
Mean of logged Data	2.204	SD of logged Data	1.425

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.56	95% Adjusted-CLT UCL (Chen-1995)	52
		95% Modified-t UCL (Johnson-1978)	48.67

Nonparametric Distribution Free UCLs

95% CLT UCL	44.9	95% Jackknife UCL	47.56
95% Standard Bootstrap UCL	43.72	95% Bootstrap-t UCL	170.8
95% Hall's Bootstrap UCL	210.8	95% Percentile Bootstrap UCL	44.27
95% BCA Bootstrap UCL	50.98		
90% Chebyshev(Mean, Sd) UCL	61.71	95% Chebyshev(Mean, Sd) UCL	78.56
97.5% Chebyshev(Mean, Sd) UCL	102	99% Chebyshev(Mean, Sd) UCL	147.9

Suggested UCL to Use

95% Hall's Bootstrap UCL	210.8

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 8:24:57 AM
From File	40005O_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.61	Mean	14.43
Maximum	22.3	Median	14.4
SD	3.568	Std. Error of Mean	1.189
Coefficient of Variation	0.247	Skewness	1.127
Mean of logged Data	2.644	SD of logged Data	0.238

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.65	95% Adjusted-CLT UCL (Chen-1995)	16.87
		95% Modified-t UCL (Johnson-1978)	16.72

Nonparametric Distribution Free UCLs

95% CLT UCL	16.39	95% Jackknife UCL	16.65
95% Standard Bootstrap UCL	16.31	95% Bootstrap-t UCL	17.1
95% Hall's Bootstrap UCL	20.45	95% Percentile Bootstrap UCL	16.3
95% BCA Bootstrap UCL	16.71		
90% Chebyshev(Mean, Sd) UCL	18	95% Chebyshev(Mean, Sd) UCL	19.62
97.5% Chebyshev(Mean, Sd) UCL	21.86	99% Chebyshev(Mean, Sd) UCL	26.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10	Mean	10.91
Maximum	11.5	Median	11
SD	0.478	Std. Error of Mean	0.159
Coefficient of Variation	0.0438	Skewness	-1.014
Mean of logged Data	2.389	SD of logged Data	0.0447

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.21	95% Adjusted-CLT UCL (Chen-1995)	11.12
		95% Modified-t UCL (Johnson-1978)	11.2

Nonparametric Distribution Free UCLs

95% CLT UCL	11.17	95% Jackknife UCL	11.21
95% Standard Bootstrap UCL	11.17	95% Bootstrap-t UCL	11.16
95% Hall's Bootstrap UCL	11.12	95% Percentile Bootstrap UCL	11.14
95% BCA Bootstrap UCL	11.1		
90% Chebyshev(Mean, Sd) UCL	11.39	95% Chebyshev(Mean, Sd) UCL	11.61
97.5% Chebyshev(Mean, Sd) UCL	11.91	99% Chebyshev(Mean, Sd) UCL	12.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	36.2	Mean	45.88
Maximum	51.9	Median	48.6
SD	6.525	Std. Error of Mean	2.175
Coefficient of Variation	0.142	Skewness	-0.725
Mean of logged Data	3.816	SD of logged Data	0.15

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.92	95% Adjusted-CLT UCL (Chen-1995)	48.89
		95% Modified-t UCL (Johnson-1978)	49.84

Nonparametric Distribution Free UCLs

95% CLT UCL	49.46	95% Jackknife UCL	49.92
95% Standard Bootstrap UCL	49.32	95% Bootstrap-t UCL	49.37
95% Hall's Bootstrap UCL	48.71	95% Percentile Bootstrap UCL	49.14
95% BCA Bootstrap UCL	48.99		
90% Chebyshev(Mean, Sd) UCL	52.4	95% Chebyshev(Mean, Sd) UCL	55.36
97.5% Chebyshev(Mean, Sd) UCL	59.46	99% Chebyshev(Mean, Sd) UCL	67.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.25	Mean	2.957
Maximum	4.51	Median	2.74
SD	0.802	Std. Error of Mean	0.267
Coefficient of Variation	0.271	Skewness	1.023
Mean of logged Data	1.054	SD of logged Data	0.254

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.454	95% Adjusted-CLT UCL (Chen-1995)	3.494
		95% Modified-t UCL (Johnson-1978)	3.469

Nonparametric Distribution Free UCLs

95% CLT UCL	3.396	95% Jackknife UCL	3.454
95% Standard Bootstrap UCL	3.371	95% Bootstrap-t UCL	3.682
95% Hall's Bootstrap UCL	3.534	95% Percentile Bootstrap UCL	3.389
95% BCA Bootstrap UCL	3.482		
90% Chebyshev(Mean, Sd) UCL	3.758	95% Chebyshev(Mean, Sd) UCL	4.121
97.5% Chebyshev(Mean, Sd) UCL	4.626	99% Chebyshev(Mean, Sd) UCL	5.616

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.419	Mean	0.669
Maximum	1.99	Median	0.505
SD	0.498	Std. Error of Mean	0.166
Coefficient of Variation	0.744	Skewness	2.953
Mean of logged Data	-0.537	SD of logged Data	0.468

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.977	95% Adjusted-CLT UCL (Chen-1995)	1.116
		95% Modified-t UCL (Johnson-1978)	1.004

Nonparametric Distribution Free UCLs

95% CLT UCL	0.941	95% Jackknife UCL	0.977
95% Standard Bootstrap UCL	0.925	95% Bootstrap-t UCL	3.528
95% Hall's Bootstrap UCL	3.708	95% Percentile Bootstrap UCL	0.991
95% BCA Bootstrap UCL	1.166		
90% Chebyshev(Mean, Sd) UCL	1.166	95% Chebyshev(Mean, Sd) UCL	1.392
97.5% Chebyshev(Mean, Sd) UCL	1.704	99% Chebyshev(Mean, Sd) UCL	2.319

Suggested UCL to Use

95% Student's-t UCL	0.977	or 95% Modified-t UCL	1.004

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.51	Mean	2.442
Maximum	6.13	Median	2.04
SD	1.395	Std. Error of Mean	0.465
Coefficient of Variation	0.571	Skewness	2.896
Mean of logged Data	0.805	SD of logged Data	0.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.306	95% Adjusted-CLT UCL (Chen-1995)	3.686
		95% Modified-t UCL (Johnson-1978)	3.381

Nonparametric Distribution Free UCLs

95% CLT UCL	3.207	95% Jackknife UCL	3.306
95% Standard Bootstrap UCL	3.17	95% Bootstrap-t UCL	14.67
95% Hall's Bootstrap UCL	8.931	95% Percentile Bootstrap UCL	3.342
95% BCA Bootstrap UCL	3.783		
90% Chebyshev(Mean, Sd) UCL	3.837	95% Chebyshev(Mean, Sd) UCL	4.469
97.5% Chebyshev(Mean, Sd) UCL	5.346	99% Chebyshev(Mean, Sd) UCL	7.069

Suggested UCL to Use

95% Student's-t UCL	3.306	or 95% Modified-t UCL	3.381

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.83	Mean	8.278
Maximum	40	Median	2.9
SD	12.24	Std. Error of Mean	4.08
Coefficient of Variation	1.479	Skewness	2.697
Mean of logged Data	1.518	SD of logged Data	1.037

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.86	95% Adjusted-CLT UCL (Chen-1995)	18.91
		95% Modified-t UCL (Johnson-1978)	16.48

Nonparametric Distribution Free UCLs

95% CLT UCL	14.99	95% Jackknife UCL	15.86
95% Standard Bootstrap UCL	14.65	95% Bootstrap-t UCL	34.26
95% Hall's Bootstrap UCL	40.11	95% Percentile Bootstrap UCL	15.91
95% BCA Bootstrap UCL	17.31		
90% Chebyshev(Mean, Sd) UCL	20.52	95% Chebyshev(Mean, Sd) UCL	26.06
97.5% Chebyshev(Mean, Sd) UCL	33.76	99% Chebyshev(Mean, Sd) UCL	48.87

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	8.379
Maximum	37.4	Median	3.17
SD	11.42	Std. Error of Mean	3.808
Coefficient of Variation	1.363	Skewness	2.515
Mean of logged Data	1.575	SD of logged Data	1.017

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.46	95% Adjusted-CLT UCL (Chen-1995)	18.05
		95% Modified-t UCL (Johnson-1978)	15.99

Nonparametric Distribution Free UCLs

95% CLT UCL	14.64	95% Jackknife UCL	15.46
95% Standard Bootstrap UCL	14.38	95% Bootstrap-t UCL	31.35
95% Hall's Bootstrap UCL	36.44	95% Percentile Bootstrap UCL	15.2
95% BCA Bootstrap UCL	17.92		
90% Chebyshev(Mean, Sd) UCL	19.8	95% Chebyshev(Mean, Sd) UCL	24.98
97.5% Chebyshev(Mean, Sd) UCL	32.16	99% Chebyshev(Mean, Sd) UCL	46.27

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	11.64
Maximum	51	Median	4.54
SD	15.49	Std. Error of Mean	5.163
Coefficient of Variation	1.33	Skewness	2.516
Mean of logged Data	1.937	SD of logged Data	0.981

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.24	95% Adjusted-CLT UCL (Chen-1995)	24.76
		95% Modified-t UCL (Johnson-1978)	21.97

Nonparametric Distribution Free UCLs

95% CLT UCL	20.14	95% Jackknife UCL	21.24
95% Standard Bootstrap UCL	19.86	95% Bootstrap-t UCL	38.58
95% Hall's Bootstrap UCL	48.12	95% Percentile Bootstrap UCL	20.75
95% BCA Bootstrap UCL	25.73		
90% Chebyshev(Mean, Sd) UCL	27.13	95% Chebyshev(Mean, Sd) UCL	34.15
97.5% Chebyshev(Mean, Sd) UCL	43.88	99% Chebyshev(Mean, Sd) UCL	63.01

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.02	Mean	5.628
Maximum	18.6	Median	3.225
SD	5.087	Std. Error of Mean	1.696
Coefficient of Variation	0.904	Skewness	2.555
Mean of logged Data	1.508	SD of logged Data	0.62

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.781	95% Adjusted-CLT UCL (Chen-1995)	9.96
		95% Modified-t UCL (Johnson-1978)	9.022

Nonparametric Distribution Free UCLs

95% CLT UCL	8.417	95% Jackknife UCL	8.781
95% Standard Bootstrap UCL	8.199	95% Bootstrap-t UCL	15.02
95% Hall's Bootstrap UCL	16.82	95% Percentile Bootstrap UCL	8.68
95% BCA Bootstrap UCL	9.456		
90% Chebyshev(Mean, Sd) UCL	10.71	95% Chebyshev(Mean, Sd) UCL	13.02
97.5% Chebyshev(Mean, Sd) UCL	16.22	99% Chebyshev(Mean, Sd) UCL	22.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.02

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	4.583
Maximum	17.4	Median	2.12
SD	5.005	Std. Error of Mean	1.668
Coefficient of Variation	1.092	Skewness	2.591
Mean of logged Data	1.208	SD of logged Data	0.738

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.685	95% Adjusted-CLT UCL (Chen-1995)	8.867
		95% Modified-t UCL (Johnson-1978)	7.925

Nonparametric Distribution Free UCLs

95% CLT UCL	7.327	95% Jackknife UCL	7.685
95% Standard Bootstrap UCL	7.182	95% Bootstrap-t UCL	14.77
95% Hall's Bootstrap UCL	16.05	95% Percentile Bootstrap UCL	7.502
95% BCA Bootstrap UCL	9.06		
90% Chebyshev(Mean, Sd) UCL	9.588	95% Chebyshev(Mean, Sd) UCL	11.86
97.5% Chebyshev(Mean, Sd) UCL	15	99% Chebyshev(Mean, Sd) UCL	21.18

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.86

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	9.132
Maximum	42.5	Median	3.26
SD	13.04	Std. Error of Mean	4.345
Coefficient of Variation	1.428	Skewness	2.579
Mean of logged Data	1.613	SD of logged Data	1.062

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.21	95% Adjusted-CLT UCL (Chen-1995)	20.27
		95% Modified-t UCL (Johnson-1978)	17.84

Nonparametric Distribution Free UCLs

95% CLT UCL	16.28	95% Jackknife UCL	17.21
95% Standard Bootstrap UCL	15.88	95% Bootstrap-t UCL	33.62
95% Hall's Bootstrap UCL	40	95% Percentile Bootstrap UCL	16.63
95% BCA Bootstrap UCL	21.03		
90% Chebyshev(Mean, Sd) UCL	22.17	95% Chebyshev(Mean, Sd) UCL	28.07
97.5% Chebyshev(Mean, Sd) UCL	36.27	99% Chebyshev(Mean, Sd) UCL	52.37

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.74	Mean	3.354
Maximum	5.43	Median	3.14
SD	0.793	Std. Error of Mean	0.264
Coefficient of Variation	0.236	Skewness	2.778
Mean of logged Data	1.191	SD of logged Data	0.195

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.846	95% Adjusted-CLT UCL (Chen-1995)	4.051
		95% Modified-t UCL (Johnson-1978)	3.887

Nonparametric Distribution Free UCLs

95% CLT UCL	3.789	95% Jackknife UCL	3.846
95% Standard Bootstrap UCL	3.772	95% Bootstrap-t UCL	5.509
95% Hall's Bootstrap UCL	6.189	95% Percentile Bootstrap UCL	3.863
95% BCA Bootstrap UCL	3.939		
90% Chebyshev(Mean, Sd) UCL	4.147	95% Chebyshev(Mean, Sd) UCL	4.507
97.5% Chebyshev(Mean, Sd) UCL	5.005	99% Chebyshev(Mean, Sd) UCL	5.984

Suggested UCL to Use

95% Student's-t UCL	3.846	or 95% Modified-t UCL	3.887

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	17.4
Maximum	81.7	Median	6.58
SD	25.43	Std. Error of Mean	8.478
Coefficient of Variation	1.462	Skewness	2.456
Mean of logged Data	2.074	SD of logged Data	1.318

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.16	95% Adjusted-CLT UCL (Chen-1995)	38.76
		95% Modified-t UCL (Johnson-1978)	34.32

Nonparametric Distribution Free UCLs

95% CLT UCL	31.34	95% Jackknife UCL	33.16
95% Standard Bootstrap UCL	30.46	95% Bootstrap-t UCL	58.59
95% Hall's Bootstrap UCL	81.72	95% Percentile Bootstrap UCL	33.45
95% BCA Bootstrap UCL	37.26		
90% Chebyshev(Mean, Sd) UCL	42.83	95% Chebyshev(Mean, Sd) UCL	54.35
97.5% Chebyshev(Mean, Sd) UCL	70.35	99% Chebyshev(Mean, Sd) UCL	101.8

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.205	Mean	1.289
Maximum	1.47	Median	1.255
SD	0.0826	Std. Error of Mean	0.0275
Coefficient of Variation	0.0641	Skewness	1.48
Mean of logged Data	0.252	SD of logged Data	0.062

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.34	95% Adjusted-CLT UCL (Chen-1995)	1.349
		95% Modified-t UCL (Johnson-1978)	1.342

Nonparametric Distribution Free UCLs

95% CLT UCL	1.334	95% Jackknife UCL	1.34
95% Standard Bootstrap UCL	1.332	95% Bootstrap-t UCL	1.375
95% Hall's Bootstrap UCL	1.581	95% Percentile Bootstrap UCL	1.334
95% BCA Bootstrap UCL	1.346		
90% Chebyshev(Mean, Sd) UCL	1.371	95% Chebyshev(Mean, Sd) UCL	1.409
97.5% Chebyshev(Mean, Sd) UCL	1.461	99% Chebyshev(Mean, Sd) UCL	1.563

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	2.66	Mean	6.86
Maximum	26.4	Median	3.225
SD	7.601	Std. Error of Mean	2.534
Coefficient of Variation	1.108	Skewness	2.626
Mean of logged Data	1.606	SD of logged Data	0.743

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.57	95% Adjusted-CLT UCL (Chen-1995)	13.4
		95% Modified-t UCL (Johnson-1978)	11.94

Nonparametric Distribution Free UCLs

95% CLT UCL	11.03	95% Jackknife UCL	11.57
95% Standard Bootstrap UCL	10.78	95% Bootstrap-t UCL	24.37
95% Hall's Bootstrap UCL	24.47	95% Percentile Bootstrap UCL	11.5
95% BCA Bootstrap UCL	13.96		
90% Chebyshev(Mean, Sd) UCL	14.46	95% Chebyshev(Mean, Sd) UCL	17.9
97.5% Chebyshev(Mean, Sd) UCL	22.68	99% Chebyshev(Mean, Sd) UCL	32.07

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4	Mean	8.95
Maximum	37.2	Median	5.94
SD	10.65	Std. Error of Mean	3.549
Coefficient of Variation	1.19	Skewness	2.941
Mean of logged Data	1.886	SD of logged Data	0.679

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.55	95% Adjusted-CLT UCL (Chen-1995)	18.51
		95% Modified-t UCL (Johnson-1978)	16.13

Nonparametric Distribution Free UCLs

95% CLT UCL	14.79	95% Jackknife UCL	15.55
95% Standard Bootstrap UCL	14.33	95% Bootstrap-t UCL	55.42

95% Hall's Bootstrap UCL	46.87	95% Percentile Bootstrap UCL	15.75
95% BCA Bootstrap UCL	19.52		
90% Chebyshev(Mean, Sd) UCL	19.6	95% Chebyshev(Mean, Sd) UCL	24.42
97.5% Chebyshev(Mean, Sd) UCL	31.12	99% Chebyshev(Mean, Sd) UCL	44.27

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	24.42

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.83	Mean	8.123
Maximum	32.9	Median	3.225
SD	9.655	Std. Error of Mean	3.218
Coefficient of Variation	1.189	Skewness	2.602
Mean of logged Data	1.713	SD of logged Data	0.823

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.11	95% Adjusted-CLT UCL (Chen-1995)	16.4
		95% Modified-t UCL (Johnson-1978)	14.57

Nonparametric Distribution Free UCLs

95% CLT UCL	13.42	95% Jackknife UCL	14.11
95% Standard Bootstrap UCL	12.96	95% Bootstrap-t UCL	27.1
95% Hall's Bootstrap UCL	31.82	95% Percentile Bootstrap UCL	13.81
95% BCA Bootstrap UCL	15.52		
90% Chebyshev(Mean, Sd) UCL	17.78	95% Chebyshev(Mean, Sd) UCL	22.15
97.5% Chebyshev(Mean, Sd) UCL	28.22	99% Chebyshev(Mean, Sd) UCL	40.14

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	22.15

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	16.94
Maximum	82.1	Median	6.04
SD	25.3	Std. Error of Mean	8.434

Coefficient of Variation	1.493	Skewness	2.632
Mean of logged Data	2.163	SD of logged Data	1.136

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.62	95% Adjusted-CLT UCL (Chen-1995)	38.72
		95% Modified-t UCL (Johnson-1978)	33.86

Nonparametric Distribution Free UCLs

95% CLT UCL	30.81	95% Jackknife UCL	32.62
95% Standard Bootstrap UCL	29.95	95% Bootstrap-t UCL	66.88
95% Hall's Bootstrap UCL	80.64	95% Percentile Bootstrap UCL	32.97
95% BCA Bootstrap UCL	40.45		
90% Chebyshev(Mean, Sd) UCL	42.24	95% Chebyshev(Mean, Sd) UCL	53.7
97.5% Chebyshev(Mean, Sd) UCL	69.61	99% Chebyshev(Mean, Sd) UCL	100.9

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:33:13 AM
From File	04082B_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.9	Mean	15.18
Maximum	19.9	Median	14.9
SD	2.793	Std. Error of Mean	0.931
Coefficient of Variation	0.184	Skewness	0.261
Mean of logged Data	2.705	SD of logged Data	0.184

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.91	95% Adjusted-CLT UCL (Chen-1995)	16.8
		95% Modified-t UCL (Johnson-1978)	16.92

Nonparametric Distribution Free UCLs

95% CLT UCL	16.71	95% Jackknife UCL	16.91
95% Standard Bootstrap UCL	16.57	95% Bootstrap-t UCL	17
95% Hall's Bootstrap UCL	16.78	95% Percentile Bootstrap UCL	16.61
95% BCA Bootstrap UCL	16.61		
90% Chebyshev(Mean, Sd) UCL	17.97	95% Chebyshev(Mean, Sd) UCL	19.24
97.5% Chebyshev(Mean, Sd) UCL	20.99	99% Chebyshev(Mean, Sd) UCL	24.44

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.51	Mean	10.96
Maximum	17.3	Median	10.3
SD	2.439	Std. Error of Mean	0.813
Coefficient of Variation	0.223	Skewness	2.727
Mean of logged Data	2.377	SD of logged Data	0.185

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.47	95% Adjusted-CLT UCL (Chen-1995)	13.08
		95% Modified-t UCL (Johnson-1978)	12.59

Nonparametric Distribution Free UCLs

95% CLT UCL	12.29	95% Jackknife UCL	12.47
95% Standard Bootstrap UCL	12.19	95% Bootstrap-t UCL	16.83
95% Hall's Bootstrap UCL	18.59	95% Percentile Bootstrap UCL	12.48
95% BCA Bootstrap UCL	13.26		
90% Chebyshev(Mean, Sd) UCL	13.4	95% Chebyshev(Mean, Sd) UCL	14.5
97.5% Chebyshev(Mean, Sd) UCL	16.03	99% Chebyshev(Mean, Sd) UCL	19.05

Suggested UCL to Use

95% Student's-t UCL	12.47	or 95% Modified-t UCL	12.59

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	42.6	Mean	56.16
Maximum	74.3	Median	49.2
SD	13.84	Std. Error of Mean	4.612
Coefficient of Variation	0.246	Skewness	0.486
Mean of logged Data	4.002	SD of logged Data	0.241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.73	95% Adjusted-CLT UCL (Chen-1995)	64.54
		95% Modified-t UCL (Johnson-1978)	64.86

Nonparametric Distribution Free UCLs

95% CLT UCL	63.74	95% Jackknife UCL	64.73
95% Standard Bootstrap UCL	63.23	95% Bootstrap-t UCL	65.96
95% Hall's Bootstrap UCL	61.82	95% Percentile Bootstrap UCL	63.47
95% BCA Bootstrap UCL	64.14		
90% Chebyshev(Mean, Sd) UCL	69.99	95% Chebyshev(Mean, Sd) UCL	76.26
97.5% Chebyshev(Mean, Sd) UCL	84.96	99% Chebyshev(Mean, Sd) UCL	102

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.33	Mean	1.762
Maximum	2	Median	1.96
SD	0.304	Std. Error of Mean	0.101
Coefficient of Variation	0.173	Skewness	-0.808
Mean of logged Data	0.552	SD of logged Data	0.185

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.951	95% Adjusted-CLT UCL (Chen-1995)	1.9
		95% Modified-t UCL (Johnson-1978)	1.946

Nonparametric Distribution Free UCLs

95% CLT UCL	1.929	95% Jackknife UCL	1.951
95% Standard Bootstrap UCL	1.923	95% Bootstrap-t UCL	1.915
95% Hall's Bootstrap UCL	1.884	95% Percentile Bootstrap UCL	1.909
95% BCA Bootstrap UCL	1.9		
90% Chebyshev(Mean, Sd) UCL	2.067	95% Chebyshev(Mean, Sd) UCL	2.204
97.5% Chebyshev(Mean, Sd) UCL	2.396	99% Chebyshev(Mean, Sd) UCL	2.772

Suggested UCL to Use

95% Student's-t UCL	1.951	or 95% Modified-t UCL	1.946

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.499	Mean	0.524
Maximum	0.535	Median	0.525
SD	0.0106	Std. Error of Mean	0.00353
Coefficient of Variation	0.0202	Skewness	-2.084
Mean of logged Data	-0.646	SD of logged Data	0.0205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.531	95% Adjusted-CLT UCL (Chen-1995)	0.527
		95% Modified-t UCL (Johnson-1978)	0.53

Nonparametric Distribution Free UCLs

95% CLT UCL	0.53	95% Jackknife UCL	0.531
95% Standard Bootstrap UCL	0.53	95% Bootstrap-t UCL	0.529
95% Hall's Bootstrap UCL	0.528	95% Percentile Bootstrap UCL	0.529
95% BCA Bootstrap UCL	0.528		
90% Chebyshev(Mean, Sd) UCL	0.535	95% Chebyshev(Mean, Sd) UCL	0.54
97.5% Chebyshev(Mean, Sd) UCL	0.546	99% Chebyshev(Mean, Sd) UCL	0.559

Suggested UCL to Use

95% Student's-t UCL	0.531	or 95% Modified-t UCL	0.53

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.025	Mean	2.127
Maximum	2.165	Median	2.135
SD	0.0414	Std. Error of Mean	0.0138
Coefficient of Variation	0.0195	Skewness	-2.193
Mean of logged Data	0.755	SD of logged Data	0.0198

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.153	95% Adjusted-CLT UCL (Chen-1995)	2.139
		95% Modified-t UCL (Johnson-1978)	2.151

Nonparametric Distribution Free UCLs

95% CLT UCL	2.15	95% Jackknife UCL	2.153
95% Standard Bootstrap UCL	2.149	95% Bootstrap-t UCL	2.146
95% Hall's Bootstrap UCL	2.143	95% Percentile Bootstrap UCL	2.146
95% BCA Bootstrap UCL	2.142		
90% Chebyshev(Mean, Sd) UCL	2.169	95% Chebyshev(Mean, Sd) UCL	2.187
97.5% Chebyshev(Mean, Sd) UCL	2.213	99% Chebyshev(Mean, Sd) UCL	2.264

Suggested UCL to Use

95% Student's-t UCL	2.153	or 95% Modified-t UCL	2.151

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.025	Mean	2.262
Maximum	3.38	Median	2.135
SD	0.421	Std. Error of Mean	0.14
Coefficient of Variation	0.186	Skewness	2.949
Mean of logged Data	0.804	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.523	95% Adjusted-CLT UCL (Chen-1995)	2.64
		95% Modified-t UCL (Johnson-1978)	2.546

Nonparametric Distribution Free UCLs

95% CLT UCL	2.493	95% Jackknife UCL	2.523
95% Standard Bootstrap UCL	2.477	95% Bootstrap-t UCL	6.391
95% Hall's Bootstrap UCL	4.546	95% Percentile Bootstrap UCL	2.541
95% BCA Bootstrap UCL	2.555		
90% Chebyshev(Mean, Sd) UCL	2.683	95% Chebyshev(Mean, Sd) UCL	2.874
97.5% Chebyshev(Mean, Sd) UCL	3.139	99% Chebyshev(Mean, Sd) UCL	3.658

Suggested UCL to Use

95% Student's-t UCL	2.523	or 95% Modified-t UCL	2.546

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.74	Mean	2.201
Maximum	3.21	Median	2.135
SD	0.401	Std. Error of Mean	0.134
Coefficient of Variation	0.182	Skewness	2.303
Mean of logged Data	0.776	SD of logged Data	0.161

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.449	95% Adjusted-CLT UCL (Chen-1995)	2.53
		95% Modified-t UCL (Johnson-1978)	2.466

Nonparametric Distribution Free UCLs

95% CLT UCL	2.42	95% Jackknife UCL	2.449
95% Standard Bootstrap UCL	2.407	95% Bootstrap-t UCL	2.947
95% Hall's Bootstrap UCL	3.843	95% Percentile Bootstrap UCL	2.445
95% BCA Bootstrap UCL	2.49		
90% Chebyshev(Mean, Sd) UCL	2.602	95% Chebyshev(Mean, Sd) UCL	2.783
97.5% Chebyshev(Mean, Sd) UCL	3.035	99% Chebyshev(Mean, Sd) UCL	3.53

Suggested UCL to Use

95% Student's-t UCL	2.449	or 95% Modified-t UCL	2.466

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.76	Mean	3.596
Maximum	5.78	Median	3.3
SD	0.88	Std. Error of Mean	0.293
Coefficient of Variation	0.245	Skewness	2.28
Mean of logged Data	1.258	SD of logged Data	0.21

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.141	95% Adjusted-CLT UCL (Chen-1995)	4.316
		95% Modified-t UCL (Johnson-1978)	4.178

Nonparametric Distribution Free UCLs

95% CLT UCL	4.078	95% Jackknife UCL	4.141
95% Standard Bootstrap UCL	4.06	95% Bootstrap-t UCL	5.012
95% Hall's Bootstrap UCL	6.604	95% Percentile Bootstrap UCL	4.075
95% BCA Bootstrap UCL	4.315		
90% Chebyshev(Mean, Sd) UCL	4.476	95% Chebyshev(Mean, Sd) UCL	4.874
97.5% Chebyshev(Mean, Sd) UCL	5.427	99% Chebyshev(Mean, Sd) UCL	6.513

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.41	Mean	3.123
Maximum	3.325	Median	3.26
SD	0.297	Std. Error of Mean	0.0989
Coefficient of Variation	0.095	Skewness	-2.134
Mean of logged Data	1.134	SD of logged Data	0.104

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.307	95% Adjusted-CLT UCL (Chen-1995)	3.21
		95% Modified-t UCL (Johnson-1978)	3.295

Nonparametric Distribution Free UCLs

95% CLT UCL	3.285	95% Jackknife UCL	3.307
95% Standard Bootstrap UCL	3.28	95% Bootstrap-t UCL	3.254
95% Hall's Bootstrap UCL	3.227	95% Percentile Bootstrap UCL	3.256
95% BCA Bootstrap UCL	3.237		
90% Chebyshev(Mean, Sd) UCL	3.419	95% Chebyshev(Mean, Sd) UCL	3.554
97.5% Chebyshev(Mean, Sd) UCL	3.74	99% Chebyshev(Mean, Sd) UCL	4.107

Suggested UCL to Use

95% Student's-t UCL	3.307	or 95% Modified-t UCL	3.295

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.025	Mean	2.217
Maximum	2.97	Median	2.135
SD	0.285	Std. Error of Mean	0.0951
Coefficient of Variation	0.129	Skewness	2.887
Mean of logged Data	0.79	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.393	95% Adjusted-CLT UCL (Chen-1995)	2.471
		95% Modified-t UCL (Johnson-1978)	2.409

Nonparametric Distribution Free UCLs

95% CLT UCL	2.373	95% Jackknife UCL	2.393
95% Standard Bootstrap UCL	2.362	95% Bootstrap-t UCL	3.99
95% Hall's Bootstrap UCL	3.453	95% Percentile Bootstrap UCL	2.4
95% BCA Bootstrap UCL	2.496		
90% Chebyshev(Mean, Sd) UCL	2.502	95% Chebyshev(Mean, Sd) UCL	2.631
97.5% Chebyshev(Mean, Sd) UCL	2.81	99% Chebyshev(Mean, Sd) UCL	3.162

Suggested UCL to Use

95% Student's-t UCL	2.393	or 95% Modified-t UCL	2.409

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	3.066
Maximum	5.44	Median	2.16
SD	1.24	Std. Error of Mean	0.413
Coefficient of Variation	0.404	Skewness	0.949
Mean of logged Data	1.053	SD of logged Data	0.379

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.834	95% Adjusted-CLT UCL (Chen-1995)	3.885
		95% Modified-t UCL (Johnson-1978)	3.856

Nonparametric Distribution Free UCLs

95% CLT UCL	3.745	95% Jackknife UCL	3.834
95% Standard Bootstrap UCL	3.709	95% Bootstrap-t UCL	4.146
95% Hall's Bootstrap UCL	3.778	95% Percentile Bootstrap UCL	3.751
95% BCA Bootstrap UCL	3.849		
90% Chebyshev(Mean, Sd) UCL	4.305	95% Chebyshev(Mean, Sd) UCL	4.867
97.5% Chebyshev(Mean, Sd) UCL	5.647	99% Chebyshev(Mean, Sd) UCL	7.178

Suggested UCL to Use

95% Student's-t UCL	3.834	or 95% Modified-t UCL	3.856

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.115	Mean	3.273
Maximum	3.335	Median	3.285
SD	0.0645	Std. Error of Mean	0.0215
Coefficient of Variation	0.0197	Skewness	-2.13
Mean of logged Data	1.186	SD of logged Data	0.02

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.313	95% Adjusted-CLT UCL (Chen-1995)	3.292
		95% Modified-t UCL (Johnson-1978)	3.311

Nonparametric Distribution Free UCLs

95% CLT UCL	3.309	95% Jackknife UCL	3.313
95% Standard Bootstrap UCL	3.307	95% Bootstrap-t UCL	3.3
95% Hall's Bootstrap UCL	3.297	95% Percentile Bootstrap UCL	3.3
95% BCA Bootstrap UCL	3.297		
90% Chebyshev(Mean, Sd) UCL	3.338	95% Chebyshev(Mean, Sd) UCL	3.367
97.5% Chebyshev(Mean, Sd) UCL	3.408	99% Chebyshev(Mean, Sd) UCL	3.487

Suggested UCL to Use

95% Student's-t UCL	3.313	or 95% Modified-t UCL	3.311

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	3.109
Maximum	5.48	Median	2.16
SD	1.487	Std. Error of Mean	0.496
Coefficient of Variation	0.478	Skewness	0.913
Mean of logged Data	1.044	SD of logged Data	0.436

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.031	95% Adjusted-CLT UCL (Chen-1995)	4.086
		95% Modified-t UCL (Johnson-1978)	4.056

Nonparametric Distribution Free UCLs

95% CLT UCL	3.925	95% Jackknife UCL	4.031
95% Standard Bootstrap UCL	3.853	95% Bootstrap-t UCL	4.272
95% Hall's Bootstrap UCL	3.59	95% Percentile Bootstrap UCL	3.918
95% BCA Bootstrap UCL	4.073		
90% Chebyshev(Mean, Sd) UCL	4.597	95% Chebyshev(Mean, Sd) UCL	5.27
97.5% Chebyshev(Mean, Sd) UCL	6.205	99% Chebyshev(Mean, Sd) UCL	8.042

Suggested UCL to Use

95% Student's-t UCL	4.031	or 95% Modified-t UCL	4.056

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.245	Mean	1.31
Maximum	1.335	Median	1.315
SD	0.0262	Std. Error of Mean	0.00874
Coefficient of Variation	0.02	Skewness	-2.22
Mean of logged Data	0.27	SD of logged Data	0.0204

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.326	95% Adjusted-CLT UCL (Chen-1995)	1.317
		95% Modified-t UCL (Johnson-1978)	1.325

Nonparametric Distribution Free UCLs

95% CLT UCL	1.324	95% Jackknife UCL	1.326
95% Standard Bootstrap UCL	1.323	95% Bootstrap-t UCL	1.321
95% Hall's Bootstrap UCL	1.32	95% Percentile Bootstrap UCL	1.322
95% BCA Bootstrap UCL	1.32		
90% Chebyshev(Mean, Sd) UCL	1.336	95% Chebyshev(Mean, Sd) UCL	1.348
97.5% Chebyshev(Mean, Sd) UCL	1.365	99% Chebyshev(Mean, Sd) UCL	1.397

Suggested UCL to Use

95% Student's-t UCL	1.326	or 95% Modified-t UCL	1.325

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.115	Mean	3.273
Maximum	3.335	Median	3.285
SD	0.0645	Std. Error of Mean	0.0215
Coefficient of Variation	0.0197	Skewness	-2.13
Mean of logged Data	1.186	SD of logged Data	0.02

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.313	95% Adjusted-CLT UCL (Chen-1995)	3.292
		95% Modified-t UCL (Johnson-1978)	3.311

Nonparametric Distribution Free UCLs

95% CLT UCL	3.309	95% Jackknife UCL	3.313
95% Standard Bootstrap UCL	3.306	95% Bootstrap-t UCL	3.3
95% Hall's Bootstrap UCL	3.297	95% Percentile Bootstrap UCL	3.302
95% BCA Bootstrap UCL	3.297		
90% Chebyshev(Mean, Sd) UCL	3.338	95% Chebyshev(Mean, Sd) UCL	3.367
97.5% Chebyshev(Mean, Sd) UCL	3.408	99% Chebyshev(Mean, Sd) UCL	3.487

Suggested UCL to Use

95% Student's-t UCL	3.313	or 95% Modified-t UCL	3.311

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.935	Mean	1.148
Maximum	1.58	Median	1
SD	0.259	Std. Error of Mean	0.0862
Coefficient of Variation	0.225	Skewness	1.057
Mean of logged Data	0.117	SD of logged Data	0.21

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.308	95% Adjusted-CLT UCL (Chen-1995)	1.322
		95% Modified-t UCL (Johnson-1978)	1.313

Nonparametric Distribution Free UCLs

95% CLT UCL	1.29	95% Jackknife UCL	1.308
95% Standard Bootstrap UCL	1.28	95% Bootstrap-t UCL	1.419
95% Hall's Bootstrap UCL	1.247	95% Percentile Bootstrap UCL	1.294
95% BCA Bootstrap UCL	1.295		
90% Chebyshev(Mean, Sd) UCL	1.406	95% Chebyshev(Mean, Sd) UCL	1.523
97.5% Chebyshev(Mean, Sd) UCL	1.686	99% Chebyshev(Mean, Sd) UCL	2.005

Suggested UCL to Use

95% Student's-t UCL	1.308	or 95% Modified-t UCL	1.313

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.4	Mean	3.094
Maximum	3.335	Median	3.27
SD	0.356	Std. Error of Mean	0.119
Coefficient of Variation	0.115	Skewness	-1.547
Mean of logged Data	1.123	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.315	95% Adjusted-CLT UCL (Chen-1995)	3.224
		95% Modified-t UCL (Johnson-1978)	3.305

Nonparametric Distribution Free UCLs

95% CLT UCL	3.29	95% Jackknife UCL	3.315
95% Standard Bootstrap UCL	3.278	95% Bootstrap-t UCL	3.267
95% Hall's Bootstrap UCL	3.228	95% Percentile Bootstrap UCL	3.27
95% BCA Bootstrap UCL	3.226		
90% Chebyshev(Mean, Sd) UCL	3.451	95% Chebyshev(Mean, Sd) UCL	3.612
97.5% Chebyshev(Mean, Sd) UCL	3.836	99% Chebyshev(Mean, Sd) UCL	4.276

Suggested UCL to Use

95% Student's-t UCL	3.315	or 95% Modified-t UCL	3.305

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.115	Mean	3.637
Maximum	6.54	Median	3.3
SD	1.091	Std. Error of Mean	0.364
Coefficient of Variation	0.3	Skewness	2.979
Mean of logged Data	1.263	SD of logged Data	0.232

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.313	95% Adjusted-CLT UCL (Chen-1995)	4.62
		95% Modified-t UCL (Johnson-1978)	4.373

Nonparametric Distribution Free UCLs

95% CLT UCL	4.235	95% Jackknife UCL	4.313
95% Standard Bootstrap UCL	4.194	95% Bootstrap-t UCL	18.18
95% Hall's Bootstrap UCL	11.28	95% Percentile Bootstrap UCL	4.354
95% BCA Bootstrap UCL	4.723		
90% Chebyshev(Mean, Sd) UCL	4.727	95% Chebyshev(Mean, Sd) UCL	5.221
97.5% Chebyshev(Mean, Sd) UCL	5.907	99% Chebyshev(Mean, Sd) UCL	7.254

Suggested UCL to Use

95% Student's-t UCL	4.313	or 95% Modified-t UCL	4.373

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:34:33 AM
From File	04126_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.8	Mean	16.23
Maximum	21	Median	14.4
SD	3.393	Std. Error of Mean	1.131
Coefficient of Variation	0.209	Skewness	0.687
Mean of logged Data	2.769	SD of logged Data	0.201

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.34	95% Adjusted-CLT UCL (Chen-1995)	18.37
		95% Modified-t UCL (Johnson-1978)	18.38

Nonparametric Distribution Free UCLs

95% CLT UCL	18.09	95% Jackknife UCL	18.34
95% Standard Bootstrap UCL	17.94	95% Bootstrap-t UCL	18.67
95% Hall's Bootstrap UCL	17.55	95% Percentile Bootstrap UCL	18.12
95% BCA Bootstrap UCL	18.39		
90% Chebyshev(Mean, Sd) UCL	19.63	95% Chebyshev(Mean, Sd) UCL	21.16
97.5% Chebyshev(Mean, Sd) UCL	23.3	99% Chebyshev(Mean, Sd) UCL	27.49

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11	Mean	14.33
Maximum	20	Median	12.4
SD	4.036	Std. Error of Mean	1.345
Coefficient of Variation	0.282	Skewness	0.8
Mean of logged Data	2.63	SD of logged Data	0.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.83	95% Adjusted-CLT UCL (Chen-1995)	16.93
		95% Modified-t UCL (Johnson-1978)	16.89

Nonparametric Distribution Free UCLs

95% CLT UCL	16.55	95% Jackknife UCL	16.83
95% Standard Bootstrap UCL	16.42	95% Bootstrap-t UCL	17.23
95% Hall's Bootstrap UCL	15.71	95% Percentile Bootstrap UCL	16.32
95% BCA Bootstrap UCL	16.96		
90% Chebyshev(Mean, Sd) UCL	18.37	95% Chebyshev(Mean, Sd) UCL	20.2
97.5% Chebyshev(Mean, Sd) UCL	22.73	99% Chebyshev(Mean, Sd) UCL	27.72

Suggested UCL to Use

95% Student's-t UCL	16.83	or 95% Modified-t UCL	16.89

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	50.4	Mean	82.5
Maximum	127	Median	60
SD	33.37	Std. Error of Mean	11.12
Coefficient of Variation	0.404	Skewness	0.396
Mean of logged Data	4.34	SD of logged Data	0.403

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	103.2	95% Adjusted-CLT UCL (Chen-1995)	102.4
		95% Modified-t UCL (Johnson-1978)	103.4

Nonparametric Distribution Free UCLs

95% CLT UCL	100.8	95% Jackknife UCL	103.2
95% Standard Bootstrap UCL	100.1	95% Bootstrap-t UCL	107.8
95% Hall's Bootstrap UCL	95.09	95% Percentile Bootstrap UCL	100.4
95% BCA Bootstrap UCL	100.7		
90% Chebyshev(Mean, Sd) UCL	115.9	95% Chebyshev(Mean, Sd) UCL	131
97.5% Chebyshev(Mean, Sd) UCL	152	99% Chebyshev(Mean, Sd) UCL	193.2

Suggested UCL to Use

95% Student's-t UCL	103.2	or 95% Modified-t UCL	103.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.29	Mean	2.184
Maximum	3	Median	2.16
SD	0.544	Std. Error of Mean	0.181
Coefficient of Variation	0.249	Skewness	0.0812
Mean of logged Data	0.752	SD of logged Data	0.261

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.522	95% Adjusted-CLT UCL (Chen-1995)	2.488
		95% Modified-t UCL (Johnson-1978)	2.523

Nonparametric Distribution Free UCLs

95% CLT UCL	2.483	95% Jackknife UCL	2.522
95% Standard Bootstrap UCL	2.469	95% Bootstrap-t UCL	2.543
95% Hall's Bootstrap UCL	2.523	95% Percentile Bootstrap UCL	2.467
95% BCA Bootstrap UCL	2.462		
90% Chebyshev(Mean, Sd) UCL	2.729	95% Chebyshev(Mean, Sd) UCL	2.975
97.5% Chebyshev(Mean, Sd) UCL	3.317	99% Chebyshev(Mean, Sd) UCL	3.989

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.478	Mean	0.512
Maximum	0.53	Median	0.515
SD	0.0159	Std. Error of Mean	0.0053
Coefficient of Variation	0.0311	Skewness	-1.347
Mean of logged Data	-0.67	SD of logged Data	0.0316

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.522	95% Adjusted-CLT UCL (Chen-1995)	0.518
		95% Modified-t UCL (Johnson-1978)	0.521

Nonparametric Distribution Free UCLs

95% CLT UCL	0.521	95% Jackknife UCL	0.522
95% Standard Bootstrap UCL	0.52	95% Bootstrap-t UCL	0.52
95% Hall's Bootstrap UCL	0.519	95% Percentile Bootstrap UCL	0.52
95% BCA Bootstrap UCL	0.518		
90% Chebyshev(Mean, Sd) UCL	0.528	95% Chebyshev(Mean, Sd) UCL	0.535
97.5% Chebyshev(Mean, Sd) UCL	0.545	99% Chebyshev(Mean, Sd) UCL	0.565

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.94	Mean	2.079
Maximum	2.16	Median	2.09
SD	0.0656	Std. Error of Mean	0.0219
Coefficient of Variation	0.0316	Skewness	-1.171
Mean of logged Data	0.731	SD of logged Data	0.0321

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.12	95% Adjusted-CLT UCL (Chen-1995)	2.106
		95% Modified-t UCL (Johnson-1978)	2.118

Nonparametric Distribution Free UCLs

95% CLT UCL	2.115	95% Jackknife UCL	2.12
95% Standard Bootstrap UCL	2.113	95% Bootstrap-t UCL	2.111
95% Hall's Bootstrap UCL	2.108	95% Percentile Bootstrap UCL	2.112
95% BCA Bootstrap UCL	2.107		
90% Chebyshev(Mean, Sd) UCL	2.145	95% Chebyshev(Mean, Sd) UCL	2.174
97.5% Chebyshev(Mean, Sd) UCL	2.215	99% Chebyshev(Mean, Sd) UCL	2.296

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.82	Mean	4.986
Maximum	15.2	Median	2.14
SD	4.864	Std. Error of Mean	1.621
Coefficient of Variation	0.976	Skewness	1.534
Mean of logged Data	1.261	SD of logged Data	0.826

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.001	95% Adjusted-CLT UCL (Chen-1995)	8.538
		95% Modified-t UCL (Johnson-1978)	8.139

Nonparametric Distribution Free UCLs

95% CLT UCL	7.653	95% Jackknife UCL	8.001
95% Standard Bootstrap UCL	7.563	95% Bootstrap-t UCL	12.72
95% Hall's Bootstrap UCL	9.283	95% Percentile Bootstrap UCL	7.479
95% BCA Bootstrap UCL	7.917		
90% Chebyshev(Mean, Sd) UCL	9.85	95% Chebyshev(Mean, Sd) UCL	12.05
97.5% Chebyshev(Mean, Sd) UCL	15.11	99% Chebyshev(Mean, Sd) UCL	21.12

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.05

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.69	Mean	5.156
Maximum	15.6	Median	2.09
SD	5.071	Std. Error of Mean	1.69
Coefficient of Variation	0.984	Skewness	1.402
Mean of logged Data	1.267	SD of logged Data	0.869

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.299	95% Adjusted-CLT UCL (Chen-1995)	8.78
		95% Modified-t UCL (Johnson-1978)	8.431

Nonparametric Distribution Free UCLs

95% CLT UCL	7.936	95% Jackknife UCL	8.299
95% Standard Bootstrap UCL	7.792	95% Bootstrap-t UCL	11.4
95% Hall's Bootstrap UCL	8.289	95% Percentile Bootstrap UCL	7.898
95% BCA Bootstrap UCL	8.37		
90% Chebyshev(Mean, Sd) UCL	10.23	95% Chebyshev(Mean, Sd) UCL	12.52
97.5% Chebyshev(Mean, Sd) UCL	15.71	99% Chebyshev(Mean, Sd) UCL	21.98

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.52

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.07	Mean	8.376
Maximum	24.7	Median	3.48
SD	8.048	Std. Error of Mean	2.683
Coefficient of Variation	0.961	Skewness	1.353
Mean of logged Data	1.768	SD of logged Data	0.852

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.36	95% Adjusted-CLT UCL (Chen-1995)	14.08
		95% Modified-t UCL (Johnson-1978)	13.57

Nonparametric Distribution Free UCLs

95% CLT UCL	12.79	95% Jackknife UCL	13.36
95% Standard Bootstrap UCL	12.54	95% Bootstrap-t UCL	17.82
95% Hall's Bootstrap UCL	11.75	95% Percentile Bootstrap UCL	13.05
95% BCA Bootstrap UCL	13.65		
90% Chebyshev(Mean, Sd) UCL	16.42	95% Chebyshev(Mean, Sd) UCL	20.07
97.5% Chebyshev(Mean, Sd) UCL	25.13	99% Chebyshev(Mean, Sd) UCL	35.07

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	20.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.125	Mean	4.772
Maximum	10.5	Median	3.255
SD	2.611	Std. Error of Mean	0.87
Coefficient of Variation	0.547	Skewness	1.625
Mean of logged Data	1.457	SD of logged Data	0.458

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.39	95% Adjusted-CLT UCL (Chen-1995)	6.707
		95% Modified-t UCL (Johnson-1978)	6.469

Nonparametric Distribution Free UCLs

95% CLT UCL	6.203	95% Jackknife UCL	6.39
95% Standard Bootstrap UCL	6.112	95% Bootstrap-t UCL	8.163
95% Hall's Bootstrap UCL	6.658	95% Percentile Bootstrap UCL	6.202
95% BCA Bootstrap UCL	6.419		
90% Chebyshev(Mean, Sd) UCL	7.383	95% Chebyshev(Mean, Sd) UCL	8.565
97.5% Chebyshev(Mean, Sd) UCL	10.21	99% Chebyshev(Mean, Sd) UCL	13.43

Suggested UCL to Use

95% Student's-t UCL	6.39	or 95% Modified-t UCL	6.469

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	3.681
Maximum	8.64	Median	2.115
SD	2.551	Std. Error of Mean	0.85
Coefficient of Variation	0.693	Skewness	1.291
Mean of logged Data	1.125	SD of logged Data	0.599

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.262	95% Adjusted-CLT UCL (Chen-1995)	5.47
		95% Modified-t UCL (Johnson-1978)	5.323

Nonparametric Distribution Free UCLs

95% CLT UCL	5.079	95% Jackknife UCL	5.262
95% Standard Bootstrap UCL	4.986	95% Bootstrap-t UCL	6.914
95% Hall's Bootstrap UCL	5.238	95% Percentile Bootstrap UCL	5.13
95% BCA Bootstrap UCL	5.333		
90% Chebyshev(Mean, Sd) UCL	6.232	95% Chebyshev(Mean, Sd) UCL	7.387
97.5% Chebyshev(Mean, Sd) UCL	8.991	99% Chebyshev(Mean, Sd) UCL	12.14

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.387

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	7.118
Maximum	22.7	Median	2.79
SD	7.493	Std. Error of Mean	2.498
Coefficient of Variation	1.053	Skewness	1.415
Mean of logged Data	1.52	SD of logged Data	0.954

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.76	95% Adjusted-CLT UCL (Chen-1995)	12.48
		95% Modified-t UCL (Johnson-1978)	11.96

Nonparametric Distribution Free UCLs

95% CLT UCL	11.23	95% Jackknife UCL	11.76
95% Standard Bootstrap UCL	11.03	95% Bootstrap-t UCL	15.94
95% Hall's Bootstrap UCL	10.6	95% Percentile Bootstrap UCL	11.14
95% BCA Bootstrap UCL	12.2		
90% Chebyshev(Mean, Sd) UCL	14.61	95% Chebyshev(Mean, Sd) UCL	18
97.5% Chebyshev(Mean, Sd) UCL	22.72	99% Chebyshev(Mean, Sd) UCL	31.97

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.91	Mean	3.161
Maximum	3.32	Median	3.205
SD	0.136	Std. Error of Mean	0.0453
Coefficient of Variation	0.043	Skewness	-0.926
Mean of logged Data	1.15	SD of logged Data	0.0438

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.245	95% Adjusted-CLT UCL (Chen-1995)	3.22
		95% Modified-t UCL (Johnson-1978)	3.243

Nonparametric Distribution Free UCLs

95% CLT UCL	3.235	95% Jackknife UCL	3.245
95% Standard Bootstrap UCL	3.233	95% Bootstrap-t UCL	3.231
95% Hall's Bootstrap UCL	3.222	95% Percentile Bootstrap UCL	3.227
95% BCA Bootstrap UCL	3.222		
90% Chebyshev(Mean, Sd) UCL	3.297	95% Chebyshev(Mean, Sd) UCL	3.358
97.5% Chebyshev(Mean, Sd) UCL	3.444	99% Chebyshev(Mean, Sd) UCL	3.612

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	7.95
Maximum	25.6	Median	3.98
SD	8.234	Std. Error of Mean	2.745
Coefficient of Variation	1.036	Skewness	1.494
Mean of logged Data	1.639	SD of logged Data	0.961

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.05	95% Adjusted-CLT UCL (Chen-1995)	13.93
		95% Modified-t UCL (Johnson-1978)	13.28

Nonparametric Distribution Free UCLs

95% CLT UCL	12.46	95% Jackknife UCL	13.05
95% Standard Bootstrap UCL	12.09	95% Bootstrap-t UCL	17.22
95% Hall's Bootstrap UCL	12.81	95% Percentile Bootstrap UCL	12.66
95% BCA Bootstrap UCL	13.55		
90% Chebyshev(Mean, Sd) UCL	16.18	95% Chebyshev(Mean, Sd) UCL	19.91
97.5% Chebyshev(Mean, Sd) UCL	25.09	99% Chebyshev(Mean, Sd) UCL	35.26

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.97	Mean	1.249
Maximum	1.78	Median	1.25
SD	0.269	Std. Error of Mean	0.0896
Coefficient of Variation	0.215	Skewness	0.849
Mean of logged Data	0.203	SD of logged Data	0.207

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.416	95% Adjusted-CLT UCL (Chen-1995)	1.424
		95% Modified-t UCL (Johnson-1978)	1.42

Nonparametric Distribution Free UCLs

95% CLT UCL	1.397	95% Jackknife UCL	1.416
95% Standard Bootstrap UCL	1.39	95% Bootstrap-t UCL	1.466
95% Hall's Bootstrap UCL	1.452	95% Percentile Bootstrap UCL	1.399
95% BCA Bootstrap UCL	1.426		
90% Chebyshev(Mean, Sd) UCL	1.518	95% Chebyshev(Mean, Sd) UCL	1.64
97.5% Chebyshev(Mean, Sd) UCL	1.809	99% Chebyshev(Mean, Sd) UCL	2.141

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.22	Mean	5.096
Maximum	12.9	Median	3.22
SD	3.515	Std. Error of Mean	1.172
Coefficient of Variation	0.69	Skewness	1.657
Mean of logged Data	1.461	SD of logged Data	0.579

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.275	95% Adjusted-CLT UCL (Chen-1995)	7.715
		95% Modified-t UCL (Johnson-1978)	7.383

Nonparametric Distribution Free UCLs

95% CLT UCL	7.024	95% Jackknife UCL	7.275
95% Standard Bootstrap UCL	6.903	95% Bootstrap-t UCL	9.653
95% Hall's Bootstrap UCL	7.685	95% Percentile Bootstrap UCL	6.967
95% BCA Bootstrap UCL	7.747		
90% Chebyshev(Mean, Sd) UCL	8.612	95% Chebyshev(Mean, Sd) UCL	10.2
97.5% Chebyshev(Mean, Sd) UCL	12.41	99% Chebyshev(Mean, Sd) UCL	16.76

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.65	Mean	4.151
Maximum	5.73	Median	4.25
SD	0.961	Std. Error of Mean	0.32
Coefficient of Variation	0.232	Skewness	0.0884
Mean of logged Data	1.398	SD of logged Data	0.241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.747	95% Adjusted-CLT UCL (Chen-1995)	4.688
		95% Modified-t UCL (Johnson-1978)	4.749

Nonparametric Distribution Free UCLs

95% CLT UCL	4.678	95% Jackknife UCL	4.747
95% Standard Bootstrap UCL	4.644	95% Bootstrap-t UCL	4.774
95% Hall's Bootstrap UCL	4.81	95% Percentile Bootstrap UCL	4.657
95% BCA Bootstrap UCL	4.671		
90% Chebyshev(Mean, Sd) UCL	5.113	95% Chebyshev(Mean, Sd) UCL	5.548
97.5% Chebyshev(Mean, Sd) UCL	6.152	99% Chebyshev(Mean, Sd) UCL	7.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.5	Mean	5.099
Maximum	11.4	Median	3.42
SD	2.899	Std. Error of Mean	0.966
Coefficient of Variation	0.569	Skewness	1.475
Mean of logged Data	1.508	SD of logged Data	0.502

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.897	95% Adjusted-CLT UCL (Chen-1995)	7.197
		95% Modified-t UCL (Johnson-1978)	6.976

Nonparametric Distribution Free UCLs

95% CLT UCL	6.689	95% Jackknife UCL	6.897
95% Standard Bootstrap UCL	6.605	95% Bootstrap-t UCL	7.882
95% Hall's Bootstrap UCL	7.942	95% Percentile Bootstrap UCL	6.739
95% BCA Bootstrap UCL	7.149		
90% Chebyshev(Mean, Sd) UCL	7.999	95% Chebyshev(Mean, Sd) UCL	9.312
97.5% Chebyshev(Mean, Sd) UCL	11.13	99% Chebyshev(Mean, Sd) UCL	14.72

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.54	Mean	7.346
Maximum	22.3	Median	3.49
SD	6.908	Std. Error of Mean	2.303
Coefficient of Variation	0.94	Skewness	1.564
Mean of logged Data	1.671	SD of logged Data	0.803

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.63	95% Adjusted-CLT UCL (Chen-1995)	12.42
		95% Modified-t UCL (Johnson-1978)	11.83

Nonparametric Distribution Free UCLs

95% CLT UCL	11.13	95% Jackknife UCL	11.63
95% Standard Bootstrap UCL	10.89	95% Bootstrap-t UCL	15.97
95% Hall's Bootstrap UCL	10.98	95% Percentile Bootstrap UCL	11.18
95% BCA Bootstrap UCL	11.75		
90% Chebyshev(Mean, Sd) UCL	14.25	95% Chebyshev(Mean, Sd) UCL	17.38
97.5% Chebyshev(Mean, Sd) UCL	21.73	99% Chebyshev(Mean, Sd) UCL	30.26

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.38

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:35:55 AM
From File	04127_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	14.6	Mean	16.54
Maximum	19.2	Median	16.2
SD	1.938	Std. Error of Mean	0.646
Coefficient of Variation	0.117	Skewness	0.479
Mean of logged Data	2.8	SD of logged Data	0.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.75	95% Adjusted-CLT UCL (Chen-1995)	17.72
		95% Modified-t UCL (Johnson-1978)	17.76

Nonparametric Distribution Free UCLs

95% CLT UCL	17.61	95% Jackknife UCL	17.75
95% Standard Bootstrap UCL	17.57	95% Bootstrap-t UCL	17.99
95% Hall's Bootstrap UCL	17.38	95% Percentile Bootstrap UCL	17.53
95% BCA Bootstrap UCL	17.6		
90% Chebyshev(Mean, Sd) UCL	18.48	95% Chebyshev(Mean, Sd) UCL	19.36
97.5% Chebyshev(Mean, Sd) UCL	20.58	99% Chebyshev(Mean, Sd) UCL	22.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	12	Mean	17.92
Maximum	27.6	Median	14.8
SD	6.053	Std. Error of Mean	2.018
Coefficient of Variation	0.338	Skewness	0.441
Mean of logged Data	2.836	SD of logged Data	0.334

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.67	95% Adjusted-CLT UCL (Chen-1995)	21.56
		95% Modified-t UCL (Johnson-1978)	21.72

Nonparametric Distribution Free UCLs

95% CLT UCL	21.24	95% Jackknife UCL	21.67
95% Standard Bootstrap UCL	21.05	95% Bootstrap-t UCL	22.1
95% Hall's Bootstrap UCL	20.7	95% Percentile Bootstrap UCL	21.16
95% BCA Bootstrap UCL	21.26		
90% Chebyshev(Mean, Sd) UCL	23.98	95% Chebyshev(Mean, Sd) UCL	26.72
97.5% Chebyshev(Mean, Sd) UCL	30.52	99% Chebyshev(Mean, Sd) UCL	38

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	52.3	Mean	80.06
Maximum	129	Median	65.6
SD	32.55	Std. Error of Mean	10.85
Coefficient of Variation	0.407	Skewness	0.829
Mean of logged Data	4.315	SD of logged Data	0.38

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	100.2	95% Adjusted-CLT UCL (Chen-1995)	101.1
		95% Modified-t UCL (Johnson-1978)	100.7

Nonparametric Distribution Free UCLs

95% CLT UCL	97.9	95% Jackknife UCL	100.2
95% Standard Bootstrap UCL	97.4	95% Bootstrap-t UCL	106.5
95% Hall's Bootstrap UCL	92.46	95% Percentile Bootstrap UCL	96.39
95% BCA Bootstrap UCL	100.4		
90% Chebyshev(Mean, Sd) UCL	112.6	95% Chebyshev(Mean, Sd) UCL	127.3
97.5% Chebyshev(Mean, Sd) UCL	147.8	99% Chebyshev(Mean, Sd) UCL	188

Suggested UCL to Use

95% Student's-t UCL	100.2	or 95% Modified-t UCL	100.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.78	Mean	3.436
Maximum	7.75	Median	2.71
SD	1.912	Std. Error of Mean	0.637
Coefficient of Variation	0.557	Skewness	1.78
Mean of logged Data	1.126	SD of logged Data	0.466

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.621	95% Adjusted-CLT UCL (Chen-1995)	4.888
		95% Modified-t UCL (Johnson-1978)	4.684

Nonparametric Distribution Free UCLs

95% CLT UCL	4.484	95% Jackknife UCL	4.621
95% Standard Bootstrap UCL	4.418	95% Bootstrap-t UCL	7.117
95% Hall's Bootstrap UCL	11.37	95% Percentile Bootstrap UCL	4.542
95% BCA Bootstrap UCL	4.872		
90% Chebyshev(Mean, Sd) UCL	5.347	95% Chebyshev(Mean, Sd) UCL	6.214
97.5% Chebyshev(Mean, Sd) UCL	7.416	99% Chebyshev(Mean, Sd) UCL	9.777

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.515	Mean	0.549
Maximum	0.736	Median	0.525
SD	0.0709	Std. Error of Mean	0.0236
Coefficient of Variation	0.129	Skewness	2.862
Mean of logged Data	-0.605	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.593	95% Adjusted-CLT UCL (Chen-1995)	0.612
		95% Modified-t UCL (Johnson-1978)	0.597

Nonparametric Distribution Free UCLs

95% CLT UCL	0.588	95% Jackknife UCL	0.593
95% Standard Bootstrap UCL	0.586	95% Bootstrap-t UCL	0.978
95% Hall's Bootstrap UCL	0.81	95% Percentile Bootstrap UCL	0.595
95% BCA Bootstrap UCL	0.604		
90% Chebyshev(Mean, Sd) UCL	0.62	95% Chebyshev(Mean, Sd) UCL	0.652
97.5% Chebyshev(Mean, Sd) UCL	0.697	99% Chebyshev(Mean, Sd) UCL	0.785

Suggested UCL to Use

95% Student's-t UCL	0.593	or 95% Modified-t UCL	0.597

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.59	Mean	2.045
Maximum	2.155	Median	2.115
SD	0.18	Std. Error of Mean	0.0599
Coefficient of Variation	0.0878	Skewness	-2.526
Mean of logged Data	0.711	SD of logged Data	0.0969

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.156	95% Adjusted-CLT UCL (Chen-1995)	2.09
		95% Modified-t UCL (Johnson-1978)	2.148

Nonparametric Distribution Free UCLs

95% CLT UCL	2.143	95% Jackknife UCL	2.156
95% Standard Bootstrap UCL	2.137	95% Bootstrap-t UCL	2.124
95% Hall's Bootstrap UCL	2.106	95% Percentile Bootstrap UCL	2.123
95% BCA Bootstrap UCL	2.108		
90% Chebyshev(Mean, Sd) UCL	2.225	95% Chebyshev(Mean, Sd) UCL	2.306
97.5% Chebyshev(Mean, Sd) UCL	2.419	99% Chebyshev(Mean, Sd) UCL	2.641

Suggested UCL to Use

95% Student's-t UCL	2.156	or 95% Modified-t UCL	2.148

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	11.8
Maximum	37.9	Median	6.55
SD	11.83	Std. Error of Mean	3.944
Coefficient of Variation	1.003	Skewness	1.522
Mean of logged Data	1.994	SD of logged Data	1.075

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.13	95% Adjusted-CLT UCL (Chen-1995)	20.42
		95% Modified-t UCL (Johnson-1978)	19.46

Nonparametric Distribution Free UCLs

95% CLT UCL	18.28	95% Jackknife UCL	19.13
95% Standard Bootstrap UCL	18	95% Bootstrap-t UCL	23.6
95% Hall's Bootstrap UCL	47.62	95% Percentile Bootstrap UCL	18.34
95% BCA Bootstrap UCL	20.08		
90% Chebyshev(Mean, Sd) UCL	23.63	95% Chebyshev(Mean, Sd) UCL	28.98
97.5% Chebyshev(Mean, Sd) UCL	36.42	99% Chebyshev(Mean, Sd) UCL	51.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	13.24
Maximum	43.4	Median	7.49
SD	13.67	Std. Error of Mean	4.558
Coefficient of Variation	1.033	Skewness	1.49
Mean of logged Data	2.058	SD of logged Data	1.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.72	95% Adjusted-CLT UCL (Chen-1995)	23.16
		95% Modified-t UCL (Johnson-1978)	22.1

Nonparametric Distribution Free UCLs

95% CLT UCL	20.74	95% Jackknife UCL	21.72
95% Standard Bootstrap UCL	20.28	95% Bootstrap-t UCL	27.74
95% Hall's Bootstrap UCL	29.06	95% Percentile Bootstrap UCL	21
95% BCA Bootstrap UCL	22.63		
90% Chebyshev(Mean, Sd) UCL	26.92	95% Chebyshev(Mean, Sd) UCL	33.11
97.5% Chebyshev(Mean, Sd) UCL	41.71	99% Chebyshev(Mean, Sd) UCL	58.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	19.51
Maximum	64.6	Median	11.6
SD	20.3	Std. Error of Mean	6.768
Coefficient of Variation	1.041	Skewness	1.536
Mean of logged Data	2.452	SD of logged Data	1.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.1	95% Adjusted-CLT UCL (Chen-1995)	34.35
		95% Modified-t UCL (Johnson-1978)	32.68

Nonparametric Distribution Free UCLs

95% CLT UCL	30.65	95% Jackknife UCL	32.1
95% Standard Bootstrap UCL	30.4	95% Bootstrap-t UCL	41.75
95% Hall's Bootstrap UCL	45.9	95% Percentile Bootstrap UCL	31.05
95% BCA Bootstrap UCL	33.61		
90% Chebyshev(Mean, Sd) UCL	39.82	95% Chebyshev(Mean, Sd) UCL	49.01
97.5% Chebyshev(Mean, Sd) UCL	61.78	99% Chebyshev(Mean, Sd) UCL	86.85

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.22	Mean	9.553
Maximum	27.9	Median	5.9
SD	8.356	Std. Error of Mean	2.785
Coefficient of Variation	0.875	Skewness	1.496
Mean of logged Data	1.945	SD of logged Data	0.825

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.73	95% Adjusted-CLT UCL (Chen-1995)	15.62
		95% Modified-t UCL (Johnson-1978)	14.96

Nonparametric Distribution Free UCLs

95% CLT UCL	14.14	95% Jackknife UCL	14.73
95% Standard Bootstrap UCL	13.87	95% Bootstrap-t UCL	18.51
95% Hall's Bootstrap UCL	20.51	95% Percentile Bootstrap UCL	14.15
95% BCA Bootstrap UCL	15.08		
90% Chebyshev(Mean, Sd) UCL	17.91	95% Chebyshev(Mean, Sd) UCL	21.69
97.5% Chebyshev(Mean, Sd) UCL	26.95	99% Chebyshev(Mean, Sd) UCL	37.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	8.216
Maximum	25.2	Median	4.4
SD	7.794	Std. Error of Mean	2.598
Coefficient of Variation	0.949	Skewness	1.451
Mean of logged Data	1.715	SD of logged Data	0.941

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.05	95% Adjusted-CLT UCL (Chen-1995)	13.83
		95% Modified-t UCL (Johnson-1978)	13.26

Nonparametric Distribution Free UCLs

95% CLT UCL	12.49	95% Jackknife UCL	13.05
95% Standard Bootstrap UCL	12.18	95% Bootstrap-t UCL	16.47
95% Hall's Bootstrap UCL	15.37	95% Percentile Bootstrap UCL	12.52
95% BCA Bootstrap UCL	13.63		
90% Chebyshev(Mean, Sd) UCL	16.01	95% Chebyshev(Mean, Sd) UCL	19.54
97.5% Chebyshev(Mean, Sd) UCL	24.44	99% Chebyshev(Mean, Sd) UCL	34.07

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	15.43
Maximum	46.6	Median	10.1
SD	15.24	Std. Error of Mean	5.079
Coefficient of Variation	0.987	Skewness	1.175
Mean of logged Data	2.188	SD of logged Data	1.206

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.88	95% Adjusted-CLT UCL (Chen-1995)	25.91
		95% Modified-t UCL (Johnson-1978)	25.21

Nonparametric Distribution Free UCLs

95% CLT UCL	23.79	95% Jackknife UCL	24.88
95% Standard Bootstrap UCL	23.4	95% Bootstrap-t UCL	29.87
95% Hall's Bootstrap UCL	29.3	95% Percentile Bootstrap UCL	23.67
95% BCA Bootstrap UCL	25.38		
90% Chebyshev(Mean, Sd) UCL	30.67	95% Chebyshev(Mean, Sd) UCL	37.57
97.5% Chebyshev(Mean, Sd) UCL	47.15	99% Chebyshev(Mean, Sd) UCL	65.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	4.138
Maximum	7.34	Median	3.32
SD	1.438	Std. Error of Mean	0.479
Coefficient of Variation	0.347	Skewness	1.722
Mean of logged Data	1.376	SD of logged Data	0.298

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.029	95% Adjusted-CLT UCL (Chen-1995)	5.22
		95% Modified-t UCL (Johnson-1978)	5.075

Nonparametric Distribution Free UCLs

95% CLT UCL	4.926	95% Jackknife UCL	5.029
95% Standard Bootstrap UCL	4.879	95% Bootstrap-t UCL	6.402
95% Hall's Bootstrap UCL	5.677	95% Percentile Bootstrap UCL	4.929
95% BCA Bootstrap UCL	5.126		
90% Chebyshev(Mean, Sd) UCL	5.575	95% Chebyshev(Mean, Sd) UCL	6.227
97.5% Chebyshev(Mean, Sd) UCL	7.13	99% Chebyshev(Mean, Sd) UCL	8.906

Suggested UCL to Use

95% Student's-t UCL	5.029	or 95% Modified-t UCL	5.075

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	15.03
Maximum	43.5	Median	9.53
SD	14.55	Std. Error of Mean	4.851
Coefficient of Variation	0.969	Skewness	1.111
Mean of logged Data	2.182	SD of logged Data	1.184

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.05	95% Adjusted-CLT UCL (Chen-1995)	24.92
		95% Modified-t UCL (Johnson-1978)	24.35

Nonparametric Distribution Free UCLs

95% CLT UCL	23	95% Jackknife UCL	24.05
95% Standard Bootstrap UCL	22.62	95% Bootstrap-t UCL	30.43
95% Hall's Bootstrap UCL	31.13	95% Percentile Bootstrap UCL	23.16
95% BCA Bootstrap UCL	24.87		
90% Chebyshev(Mean, Sd) UCL	29.58	95% Chebyshev(Mean, Sd) UCL	36.17
97.5% Chebyshev(Mean, Sd) UCL	45.32	99% Chebyshev(Mean, Sd) UCL	63.29

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.29	Mean	1.341
Maximum	1.62	Median	1.305
SD	0.105	Std. Error of Mean	0.035
Coefficient of Variation	0.0783	Skewness	2.949
Mean of logged Data	0.291	SD of logged Data	0.0722

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.406	95% Adjusted-CLT UCL (Chen-1995)	1.435
		95% Modified-t UCL (Johnson-1978)	1.412

Nonparametric Distribution Free UCLs

95% CLT UCL	1.399	95% Jackknife UCL	1.406
95% Standard Bootstrap UCL	1.395	95% Bootstrap-t UCL	1.908
95% Hall's Bootstrap UCL	1.73	95% Percentile Bootstrap UCL	1.409
95% BCA Bootstrap UCL	1.444		
90% Chebyshev(Mean, Sd) UCL	1.446	95% Chebyshev(Mean, Sd) UCL	1.494
97.5% Chebyshev(Mean, Sd) UCL	1.56	99% Chebyshev(Mean, Sd) UCL	1.69

Suggested UCL to Use

95% Student's-t UCL	1.406	or 95% Modified-t UCL	1.412

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.255	Mean	11.22
Maximum	34.4	Median	6.05
SD	10.52	Std. Error of Mean	3.506
Coefficient of Variation	0.938	Skewness	1.526
Mean of logged Data	2.054	SD of logged Data	0.894

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.74	95% Adjusted-CLT UCL (Chen-1995)	18.89
		95% Modified-t UCL (Johnson-1978)	18.03

Nonparametric Distribution Free UCLs

95% CLT UCL	16.98	95% Jackknife UCL	17.74
95% Standard Bootstrap UCL	16.66	95% Bootstrap-t UCL	20.53
95% Hall's Bootstrap UCL	23.98	95% Percentile Bootstrap UCL	16.78
95% BCA Bootstrap UCL	18.57		
90% Chebyshev(Mean, Sd) UCL	21.74	95% Chebyshev(Mean, Sd) UCL	26.5
97.5% Chebyshev(Mean, Sd) UCL	33.11	99% Chebyshev(Mean, Sd) UCL	46.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.645	Mean	7.204
Maximum	16	Median	4.92
SD	4.63	Std. Error of Mean	1.543
Coefficient of Variation	0.643	Skewness	1.64
Mean of logged Data	1.839	SD of logged Data	0.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.07	95% Adjusted-CLT UCL (Chen-1995)	10.64
		95% Modified-t UCL (Johnson-1978)	10.22

Nonparametric Distribution Free UCLs

95% CLT UCL	9.743	95% Jackknife UCL	10.07
95% Standard Bootstrap UCL	9.563	95% Bootstrap-t UCL	117.5
95% Hall's Bootstrap UCL	158.5	95% Percentile Bootstrap UCL	9.664

95% BCA Bootstrap UCL	10.36		
90% Chebyshev(Mean, Sd) UCL	11.83	95% Chebyshev(Mean, Sd) UCL	13.93
97.5% Chebyshev(Mean, Sd) UCL	16.84	99% Chebyshev(Mean, Sd) UCL	22.56

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.93

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.81	Mean	5.222
Maximum	10.7	Median	3.32
SD	3.143	Std. Error of Mean	1.048
Coefficient of Variation	0.602	Skewness	1.246
Mean of logged Data	1.517	SD of logged Data	0.527

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.17	95% Adjusted-CLT UCL (Chen-1995)	7.41
		95% Modified-t UCL (Johnson-1978)	7.243

Nonparametric Distribution Free UCLs

95% CLT UCL	6.945	95% Jackknife UCL	7.17
95% Standard Bootstrap UCL	6.892	95% Bootstrap-t UCL	9.661
95% Hall's Bootstrap UCL	7.658	95% Percentile Bootstrap UCL	6.912
95% BCA Bootstrap UCL	7.207		
90% Chebyshev(Mean, Sd) UCL	8.365	95% Chebyshev(Mean, Sd) UCL	9.789
97.5% Chebyshev(Mean, Sd) UCL	11.76	99% Chebyshev(Mean, Sd) UCL	15.65

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.789

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	15.21
Maximum	41.8	Median	10.3
SD	13.52	Std. Error of Mean	4.507
Coefficient of Variation	0.889	Skewness	1.122

Mean of logged Data	2.329	SD of logged Data	0.981

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.59	95% Adjusted-CLT UCL (Chen-1995)	24.42
		95% Modified-t UCL (Johnson-1978)	23.87

Nonparametric Distribution Free UCLs

95% CLT UCL	22.62	95% Jackknife UCL	23.59
95% Standard Bootstrap UCL	22.34	95% Bootstrap-t UCL	29.15
95% Hall's Bootstrap UCL	31.4	95% Percentile Bootstrap UCL	22.41
95% BCA Bootstrap UCL	23.68		
90% Chebyshev(Mean, Sd) UCL	28.73	95% Chebyshev(Mean, Sd) UCL	34.85
97.5% Chebyshev(Mean, Sd) UCL	43.35	99% Chebyshev(Mean, Sd) UCL	60.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:37:08 AM
From File	04131_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	13.1	Mean	15
Maximum	18.4	Median	14
SD	2.24	Std. Error of Mean	0.747
Coefficient of Variation	0.149	Skewness	0.792
Mean of logged Data	2.699	SD of logged Data	0.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.39	95% Adjusted-CLT UCL (Chen-1995)	16.44
		95% Modified-t UCL (Johnson-1978)	16.42

Nonparametric Distribution Free UCLs

95% CLT UCL	16.23	95% Jackknife UCL	16.39
95% Standard Bootstrap UCL	16.16	95% Bootstrap-t UCL	16.68
95% Hall's Bootstrap UCL	15.82	95% Percentile Bootstrap UCL	16.16
95% BCA Bootstrap UCL	16.29		
90% Chebyshev(Mean, Sd) UCL	17.24	95% Chebyshev(Mean, Sd) UCL	18.25
97.5% Chebyshev(Mean, Sd) UCL	19.66	99% Chebyshev(Mean, Sd) UCL	22.43

Suggested UCL to Use

95% Student's-t UCL	16.39	or 95% Modified-t UCL	16.42

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.2	Mean	13.72
Maximum	19.7	Median	12.2
SD	3.846	Std. Error of Mean	1.282
Coefficient of Variation	0.28	Skewness	0.741
Mean of logged Data	2.586	SD of logged Data	0.267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.11	95% Adjusted-CLT UCL (Chen-1995)	16.17
		95% Modified-t UCL (Johnson-1978)	16.16

Nonparametric Distribution Free UCLs

95% CLT UCL	15.83	95% Jackknife UCL	16.11
95% Standard Bootstrap UCL	15.74	95% Bootstrap-t UCL	16.51
95% Hall's Bootstrap UCL	15.26	95% Percentile Bootstrap UCL	15.76
95% BCA Bootstrap UCL	16		
90% Chebyshev(Mean, Sd) UCL	17.57	95% Chebyshev(Mean, Sd) UCL	19.31
97.5% Chebyshev(Mean, Sd) UCL	21.73	99% Chebyshev(Mean, Sd) UCL	26.48

Suggested UCL to Use

95% Student's-t UCL	16.11	or 95% Modified-t UCL	16.16

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	47.8	Mean	65.77
Maximum	97	Median	55.4
SD	21.4	Std. Error of Mean	7.133
Coefficient of Variation	0.325	Skewness	0.782
Mean of logged Data	4.142	SD of logged Data	0.307

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	79.03	95% Adjusted-CLT UCL (Chen-1995)	79.49
		95% Modified-t UCL (Johnson-1978)	79.34

Nonparametric Distribution Free UCLs

95% CLT UCL	77.5	95% Jackknife UCL	79.03
95% Standard Bootstrap UCL	77.16	95% Bootstrap-t UCL	81.04
95% Hall's Bootstrap UCL	73.41	95% Percentile Bootstrap UCL	76.37
95% BCA Bootstrap UCL	79.29		
90% Chebyshev(Mean, Sd) UCL	87.17	95% Chebyshev(Mean, Sd) UCL	96.86
97.5% Chebyshev(Mean, Sd) UCL	110.3	99% Chebyshev(Mean, Sd) UCL	136.7

Suggested UCL to Use

95% Student's-t UCL	79.03	or 95% Modified-t UCL	79.34

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.35	Mean	2.427
Maximum	3.76	Median	1.72
SD	1.045	Std. Error of Mean	0.348
Coefficient of Variation	0.431	Skewness	0.555
Mean of logged Data	0.806	SD of logged Data	0.422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.075	95% Adjusted-CLT UCL (Chen-1995)	3.069
		95% Modified-t UCL (Johnson-1978)	3.085

Nonparametric Distribution Free UCLs

95% CLT UCL	3	95% Jackknife UCL	3.075
95% Standard Bootstrap UCL	2.96	95% Bootstrap-t UCL	3.236
95% Hall's Bootstrap UCL	2.847	95% Percentile Bootstrap UCL	2.983
95% BCA Bootstrap UCL	3.026		
90% Chebyshev(Mean, Sd) UCL	3.472	95% Chebyshev(Mean, Sd) UCL	3.946
97.5% Chebyshev(Mean, Sd) UCL	4.603	99% Chebyshev(Mean, Sd) UCL	5.894

Suggested UCL to Use

95% Student's-t UCL	3.075	or 95% Modified-t UCL	3.085

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.489	Mean	0.507
Maximum	0.52	Median	0.51
SD	0.0124	Std. Error of Mean	0.00413
Coefficient of Variation	0.0244	Skewness	-0.338
Mean of logged Data	-0.679	SD of logged Data	0.0245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.515	95% Adjusted-CLT UCL (Chen-1995)	0.514
		95% Modified-t UCL (Johnson-1978)	0.515

Nonparametric Distribution Free UCLs

95% CLT UCL	0.514	95% Jackknife UCL	0.515
95% Standard Bootstrap UCL	0.514	95% Bootstrap-t UCL	0.515
95% Hall's Bootstrap UCL	0.513	95% Percentile Bootstrap UCL	0.513
95% BCA Bootstrap UCL	0.514		
90% Chebyshev(Mean, Sd) UCL	0.52	95% Chebyshev(Mean, Sd) UCL	0.525
97.5% Chebyshev(Mean, Sd) UCL	0.533	99% Chebyshev(Mean, Sd) UCL	0.548

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.35	Mean	1.988
Maximum	2.115	Median	2.07
SD	0.243	Std. Error of Mean	0.0811
Coefficient of Variation	0.122	Skewness	-2.817
Mean of logged Data	0.679	SD of logged Data	0.144

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.139	95% Adjusted-CLT UCL (Chen-1995)	2.04
		95% Modified-t UCL (Johnson-1978)	2.126

Nonparametric Distribution Free UCLs

95% CLT UCL	2.122	95% Jackknife UCL	2.139
95% Standard Bootstrap UCL	2.117	95% Bootstrap-t UCL	2.095
95% Hall's Bootstrap UCL	2.069	95% Percentile Bootstrap UCL	2.083
95% BCA Bootstrap UCL	2.073		
90% Chebyshev(Mean, Sd) UCL	2.232	95% Chebyshev(Mean, Sd) UCL	2.342
97.5% Chebyshev(Mean, Sd) UCL	2.495	99% Chebyshev(Mean, Sd) UCL	2.796

Suggested UCL to Use

95% Student's-t UCL	2.139	or 95% Modified-t UCL	2.126

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.69	Mean	3.319
Maximum	6.87	Median	2.11
SD	1.975	Std. Error of Mean	0.658
Coefficient of Variation	0.595	Skewness	1.029
Mean of logged Data	1.061	SD of logged Data	0.538

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.543	95% Adjusted-CLT UCL (Chen-1995)	4.643
		95% Modified-t UCL (Johnson-1978)	4.581

Nonparametric Distribution Free UCLs

95% CLT UCL	4.402	95% Jackknife UCL	4.543
95% Standard Bootstrap UCL	4.326	95% Bootstrap-t UCL	4.907
95% Hall's Bootstrap UCL	4.024	95% Percentile Bootstrap UCL	4.418
95% BCA Bootstrap UCL	4.459		
90% Chebyshev(Mean, Sd) UCL	5.294	95% Chebyshev(Mean, Sd) UCL	6.188
97.5% Chebyshev(Mean, Sd) UCL	7.43	99% Chebyshev(Mean, Sd) UCL	9.869

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.188

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.48	Mean	4.306
Maximum	11.2	Median	2.11
SD	3.663	Std. Error of Mean	1.221
Coefficient of Variation	0.851	Skewness	1.117
Mean of logged Data	1.168	SD of logged Data	0.778

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.577	95% Adjusted-CLT UCL (Chen-1995)	6.8
		95% Modified-t UCL (Johnson-1978)	6.652

Nonparametric Distribution Free UCLs

95% CLT UCL	6.315	95% Jackknife UCL	6.577
95% Standard Bootstrap UCL	6.184	95% Bootstrap-t UCL	7.45
95% Hall's Bootstrap UCL	5.63	95% Percentile Bootstrap UCL	6.319
95% BCA Bootstrap UCL	6.579		
90% Chebyshev(Mean, Sd) UCL	7.969	95% Chebyshev(Mean, Sd) UCL	9.628
97.5% Chebyshev(Mean, Sd) UCL	11.93	99% Chebyshev(Mean, Sd) UCL	16.46

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.628

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.81	Mean	6.488
Maximum	13.8	Median	3.25
SD	4.792	Std. Error of Mean	1.597
Coefficient of Variation	0.739	Skewness	0.869
Mean of logged Data	1.644	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.459	95% Adjusted-CLT UCL (Chen-1995)	9.61
		95% Modified-t UCL (Johnson-1978)	9.536

Nonparametric Distribution Free UCLs

95% CLT UCL	9.116	95% Jackknife UCL	9.459
95% Standard Bootstrap UCL	8.999	95% Bootstrap-t UCL	10.08
95% Hall's Bootstrap UCL	8.062	95% Percentile Bootstrap UCL	8.859
95% BCA Bootstrap UCL	9.417		
90% Chebyshev(Mean, Sd) UCL	11.28	95% Chebyshev(Mean, Sd) UCL	13.45
97.5% Chebyshev(Mean, Sd) UCL	16.46	99% Chebyshev(Mean, Sd) UCL	22.38

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.45

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.125	Mean	5.961
Maximum	13.6	Median	3.245
SD	3.95	Std. Error of Mean	1.317
Coefficient of Variation	0.663	Skewness	1.143
Mean of logged Data	1.613	SD of logged Data	0.598

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.409	95% Adjusted-CLT UCL (Chen-1995)	8.663
		95% Modified-t UCL (Johnson-1978)	8.493

Nonparametric Distribution Free UCLs

95% CLT UCL	8.127	95% Jackknife UCL	8.409
95% Standard Bootstrap UCL	8.045	95% Bootstrap-t UCL	9.51
95% Hall's Bootstrap UCL	7.644	95% Percentile Bootstrap UCL	8.081
95% BCA Bootstrap UCL	8.381		
90% Chebyshev(Mean, Sd) UCL	9.911	95% Chebyshev(Mean, Sd) UCL	11.7
97.5% Chebyshev(Mean, Sd) UCL	14.18	99% Chebyshev(Mean, Sd) UCL	19.06

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	2.637
Maximum	3.76	Median	2.11
SD	0.825	Std. Error of Mean	0.275
Coefficient of Variation	0.313	Skewness	0.854
Mean of logged Data	0.93	SD of logged Data	0.291

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.149	95% Adjusted-CLT UCL (Chen-1995)	3.173
		95% Modified-t UCL (Johnson-1978)	3.162

Nonparametric Distribution Free UCLs

95% CLT UCL	3.09	95% Jackknife UCL	3.149
95% Standard Bootstrap UCL	3.067	95% Bootstrap-t UCL	3.199
95% Hall's Bootstrap UCL	2.894	95% Percentile Bootstrap UCL	3.019
95% BCA Bootstrap UCL	3.172		
90% Chebyshev(Mean, Sd) UCL	3.462	95% Chebyshev(Mean, Sd) UCL	3.836
97.5% Chebyshev(Mean, Sd) UCL	4.355	99% Chebyshev(Mean, Sd) UCL	5.374

Suggested UCL to Use

95% Student's-t UCL	3.149	or 95% Modified-t UCL	3.162

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	7.144
Maximum	17.9	Median	2.8
SD	7.015	Std. Error of Mean	2.338
Coefficient of Variation	0.982	Skewness	0.873
Mean of logged Data	1.528	SD of logged Data	0.969

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.49	95% Adjusted-CLT UCL (Chen-1995)	11.72
		95% Modified-t UCL (Johnson-1978)	11.61

Nonparametric Distribution Free UCLs

95% CLT UCL	10.99	95% Jackknife UCL	11.49
95% Standard Bootstrap UCL	10.72	95% Bootstrap-t UCL	12.4
95% Hall's Bootstrap UCL	9.447	95% Percentile Bootstrap UCL	10.64
95% BCA Bootstrap UCL	11.87		
90% Chebyshev(Mean, Sd) UCL	14.16	95% Chebyshev(Mean, Sd) UCL	17.34
97.5% Chebyshev(Mean, Sd) UCL	21.75	99% Chebyshev(Mean, Sd) UCL	30.41

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.96	Mean	3.159
Maximum	3.25	Median	3.185
SD	0.0969	Std. Error of Mean	0.0323
Coefficient of Variation	0.0307	Skewness	-1.126
Mean of logged Data	1.15	SD of logged Data	0.0311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.219	95% Adjusted-CLT UCL (Chen-1995)	3.199
		95% Modified-t UCL (Johnson-1978)	3.217

Nonparametric Distribution Free UCLs

95% CLT UCL	3.212	95% Jackknife UCL	3.219
95% Standard Bootstrap UCL	3.208	95% Bootstrap-t UCL	3.207
95% Hall's Bootstrap UCL	3.2	95% Percentile Bootstrap UCL	3.206
95% BCA Bootstrap UCL	3.201		
90% Chebyshev(Mean, Sd) UCL	3.256	95% Chebyshev(Mean, Sd) UCL	3.3
97.5% Chebyshev(Mean, Sd) UCL	3.361	99% Chebyshev(Mean, Sd) UCL	3.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	7.035
Maximum	19.5	Median	3.41
SD	6.75	Std. Error of Mean	2.25
Coefficient of Variation	0.96	Skewness	1.109
Mean of logged Data	1.553	SD of logged Data	0.924

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.22	95% Adjusted-CLT UCL (Chen-1995)	11.63
		95% Modified-t UCL (Johnson-1978)	11.36

Nonparametric Distribution Free UCLs

95% CLT UCL	10.74	95% Jackknife UCL	11.22
95% Standard Bootstrap UCL	10.53	95% Bootstrap-t UCL	14.2
95% Hall's Bootstrap UCL	10.12	95% Percentile Bootstrap UCL	10.68
95% BCA Bootstrap UCL	11.46		
90% Chebyshev(Mean, Sd) UCL	13.79	95% Chebyshev(Mean, Sd) UCL	16.84
97.5% Chebyshev(Mean, Sd) UCL	21.09	99% Chebyshev(Mean, Sd) UCL	29.42

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.03	Mean	1.256
Maximum	1.42	Median	1.275
SD	0.105	Std. Error of Mean	0.0351
Coefficient of Variation	0.0839	Skewness	-0.999
Mean of logged Data	0.224	SD of logged Data	0.0875

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.321	95% Adjusted-CLT UCL (Chen-1995)	1.301
		95% Modified-t UCL (Johnson-1978)	1.319

Nonparametric Distribution Free UCLs

95% CLT UCL	1.313	95% Jackknife UCL	1.321
95% Standard Bootstrap UCL	1.309	95% Bootstrap-t UCL	1.307
95% Hall's Bootstrap UCL	1.307	95% Percentile Bootstrap UCL	1.306
95% BCA Bootstrap UCL	1.298		
90% Chebyshev(Mean, Sd) UCL	1.361	95% Chebyshev(Mean, Sd) UCL	1.409
97.5% Chebyshev(Mean, Sd) UCL	1.475	99% Chebyshev(Mean, Sd) UCL	1.605

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.36	Mean	4.233
Maximum	7.71	Median	3.235
SD	1.845	Std. Error of Mean	0.615
Coefficient of Variation	0.436	Skewness	1.058
Mean of logged Data	1.367	SD of logged Data	0.401

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.376	95% Adjusted-CLT UCL (Chen-1995)	5.476
		95% Modified-t UCL (Johnson-1978)	5.413

Nonparametric Distribution Free UCLs

95% CLT UCL	5.244	95% Jackknife UCL	5.376
95% Standard Bootstrap UCL	5.209	95% Bootstrap-t UCL	5.837
95% Hall's Bootstrap UCL	5.069	95% Percentile Bootstrap UCL	5.219
95% BCA Bootstrap UCL	5.36		
90% Chebyshev(Mean, Sd) UCL	6.078	95% Chebyshev(Mean, Sd) UCL	6.914
97.5% Chebyshev(Mean, Sd) UCL	8.074	99% Chebyshev(Mean, Sd) UCL	10.35

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.02	Mean	4.441
Maximum	5.9	Median	3.93
SD	1.092	Std. Error of Mean	0.364
Coefficient of Variation	0.246	Skewness	0.23
Mean of logged Data	1.464	SD of logged Data	0.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.118	95% Adjusted-CLT UCL (Chen-1995)	5.07
		95% Modified-t UCL (Johnson-1978)	5.123

Nonparametric Distribution Free UCLs

95% CLT UCL	5.04	95% Jackknife UCL	5.118
95% Standard Bootstrap UCL	5.012	95% Bootstrap-t UCL	5.21
95% Hall's Bootstrap UCL	4.932	95% Percentile Bootstrap UCL	5.016
95% BCA Bootstrap UCL	5.006		
90% Chebyshev(Mean, Sd) UCL	5.533	95% Chebyshev(Mean, Sd) UCL	6.028
97.5% Chebyshev(Mean, Sd) UCL	6.714	99% Chebyshev(Mean, Sd) UCL	8.062

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.49	Mean	5.748
Maximum	15.9	Median	3.245
SD	4.573	Std. Error of Mean	1.524
Coefficient of Variation	0.795	Skewness	1.67
Mean of logged Data	1.528	SD of logged Data	0.662

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.583	95% Adjusted-CLT UCL (Chen-1995)	9.162
		95% Modified-t UCL (Johnson-1978)	8.724

Nonparametric Distribution Free UCLs

95% CLT UCL	8.255	95% Jackknife UCL	8.583
95% Standard Bootstrap UCL	8.145	95% Bootstrap-t UCL	11.77
95% Hall's Bootstrap UCL	9.463	95% Percentile Bootstrap UCL	8.221
95% BCA Bootstrap UCL	8.924		
90% Chebyshev(Mean, Sd) UCL	10.32	95% Chebyshev(Mean, Sd) UCL	12.39
97.5% Chebyshev(Mean, Sd) UCL	15.27	99% Chebyshev(Mean, Sd) UCL	20.91

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.39

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.96	Mean	6.506
Maximum	15.5	Median	3.235
SD	5.15	Std. Error of Mean	1.717
Coefficient of Variation	0.792	Skewness	1.013
Mean of logged Data	1.621	SD of logged Data	0.72

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.698	95% Adjusted-CLT UCL (Chen-1995)	9.948
		95% Modified-t UCL (Johnson-1978)	9.794

Nonparametric Distribution Free UCLs

95% CLT UCL	9.329	95% Jackknife UCL	9.698
95% Standard Bootstrap UCL	9.162	95% Bootstrap-t UCL	10.98
95% Hall's Bootstrap UCL	8.288	95% Percentile Bootstrap UCL	9.268
95% BCA Bootstrap UCL	9.763		
90% Chebyshev(Mean, Sd) UCL	11.66	95% Chebyshev(Mean, Sd) UCL	13.99
97.5% Chebyshev(Mean, Sd) UCL	17.23	99% Chebyshev(Mean, Sd) UCL	23.59

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.99

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:38:19 AM
From File	04152_153_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	15	Mean	18.8
Maximum	22.8	Median	18.6
SD	3.021	Std. Error of Mean	1.007
Coefficient of Variation	0.161	Skewness	0.303
Mean of logged Data	2.922	SD of logged Data	0.16

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.67	95% Adjusted-CLT UCL (Chen-1995)	20.56
		95% Modified-t UCL (Johnson-1978)	20.69

Nonparametric Distribution Free UCLs

95% CLT UCL	20.46	95% Jackknife UCL	20.67
95% Standard Bootstrap UCL	20.39	95% Bootstrap-t UCL	20.83
95% Hall's Bootstrap UCL	20.24	95% Percentile Bootstrap UCL	20.4
95% BCA Bootstrap UCL	20.43		
90% Chebyshev(Mean, Sd) UCL	21.82	95% Chebyshev(Mean, Sd) UCL	23.19
97.5% Chebyshev(Mean, Sd) UCL	25.09	99% Chebyshev(Mean, Sd) UCL	28.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.5	Mean	15.54
Maximum	19.1	Median	15.6
SD	1.959	Std. Error of Mean	0.653
Coefficient of Variation	0.126	Skewness	0.202
Mean of logged Data	2.737	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.76	95% Adjusted-CLT UCL (Chen-1995)	16.67
		95% Modified-t UCL (Johnson-1978)	16.77

Nonparametric Distribution Free UCLs

95% CLT UCL	16.62	95% Jackknife UCL	16.76
95% Standard Bootstrap UCL	16.56	95% Bootstrap-t UCL	16.76
95% Hall's Bootstrap UCL	16.85	95% Percentile Bootstrap UCL	16.61
95% BCA Bootstrap UCL	16.53		
90% Chebyshev(Mean, Sd) UCL	17.5	95% Chebyshev(Mean, Sd) UCL	18.39
97.5% Chebyshev(Mean, Sd) UCL	19.62	99% Chebyshev(Mean, Sd) UCL	22.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	57.6	Mean	69.42
Maximum	86.9	Median	68.7
SD	10.55	Std. Error of Mean	3.516
Coefficient of Variation	0.152	Skewness	0.616
Mean of logged Data	4.23	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	75.96	95% Adjusted-CLT UCL (Chen-1995)	75.98
		95% Modified-t UCL (Johnson-1978)	76.08

Nonparametric Distribution Free UCLs

95% CLT UCL	75.21	95% Jackknife UCL	75.96
95% Standard Bootstrap UCL	74.91	95% Bootstrap-t UCL	77.2
95% Hall's Bootstrap UCL	78.73	95% Percentile Bootstrap UCL	74.87
95% BCA Bootstrap UCL	75.4		
90% Chebyshev(Mean, Sd) UCL	79.97	95% Chebyshev(Mean, Sd) UCL	84.75
97.5% Chebyshev(Mean, Sd) UCL	91.38	99% Chebyshev(Mean, Sd) UCL	104.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.842	Mean	2.212
Maximum	6.92	Median	1.97
SD	1.834	Std. Error of Mean	0.611
Coefficient of Variation	0.829	Skewness	2.57
Mean of logged Data	0.596	SD of logged Data	0.612

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.35	95% Adjusted-CLT UCL (Chen-1995)	3.778
		95% Modified-t UCL (Johnson-1978)	3.437

Nonparametric Distribution Free UCLs

95% CLT UCL	3.218	95% Jackknife UCL	3.35
95% Standard Bootstrap UCL	3.167	95% Bootstrap-t UCL	4.902
95% Hall's Bootstrap UCL	7.586	95% Percentile Bootstrap UCL	3.314
95% BCA Bootstrap UCL	3.641		
90% Chebyshev(Mean, Sd) UCL	4.047	95% Chebyshev(Mean, Sd) UCL	4.878
97.5% Chebyshev(Mean, Sd) UCL	6.031	99% Chebyshev(Mean, Sd) UCL	8.297

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.458	Mean	0.561
Maximum	1.02	Median	0.515
SD	0.174	Std. Error of Mean	0.058
Coefficient of Variation	0.31	Skewness	2.886
Mean of logged Data	-0.609	SD of logged Data	0.241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.669	95% Adjusted-CLT UCL (Chen-1995)	0.716
		95% Modified-t UCL (Johnson-1978)	0.678

Nonparametric Distribution Free UCLs

95% CLT UCL	0.656	95% Jackknife UCL	0.669
95% Standard Bootstrap UCL	0.649	95% Bootstrap-t UCL	1.085
95% Hall's Bootstrap UCL	1.166	95% Percentile Bootstrap UCL	0.671
95% BCA Bootstrap UCL	0.735		
90% Chebyshev(Mean, Sd) UCL	0.735	95% Chebyshev(Mean, Sd) UCL	0.813
97.5% Chebyshev(Mean, Sd) UCL	0.923	99% Chebyshev(Mean, Sd) UCL	1.138

Suggested UCL to Use

95% Student's-t UCL	0.669	or 95% Modified-t UCL	0.678

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.44	Mean	2.013
Maximum	2.16	Median	2.085
SD	0.227	Std. Error of Mean	0.0756
Coefficient of Variation	0.113	Skewness	-2.455
Mean of logged Data	0.693	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.154	95% Adjusted-CLT UCL (Chen-1995)	2.072
		95% Modified-t UCL (Johnson-1978)	2.144

Nonparametric Distribution Free UCLs

95% CLT UCL	2.138	95% Jackknife UCL	2.154
95% Standard Bootstrap UCL	2.136	95% Bootstrap-t UCL	2.109
95% Hall's Bootstrap UCL	2.089	95% Percentile Bootstrap UCL	2.112
95% BCA Bootstrap UCL	2.095		
90% Chebyshev(Mean, Sd) UCL	2.24	95% Chebyshev(Mean, Sd) UCL	2.343
97.5% Chebyshev(Mean, Sd) UCL	2.486	99% Chebyshev(Mean, Sd) UCL	2.766

Suggested UCL to Use

95% Student's-t UCL	2.154	or 95% Modified-t UCL	2.144

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.89	Mean	5.672
Maximum	13.1	Median	2.34
SD	4.781	Std. Error of Mean	1.594
Coefficient of Variation	0.843	Skewness	0.826
Mean of logged Data	1.409	SD of logged Data	0.851

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.635	95% Adjusted-CLT UCL (Chen-1995)	8.762
		95% Modified-t UCL (Johnson-1978)	8.709

Nonparametric Distribution Free UCLs

95% CLT UCL	8.293	95% Jackknife UCL	8.635
95% Standard Bootstrap UCL	8.171	95% Bootstrap-t UCL	10.01
95% Hall's Bootstrap UCL	7.957	95% Percentile Bootstrap UCL	8.403
95% BCA Bootstrap UCL	8.862		
90% Chebyshev(Mean, Sd) UCL	10.45	95% Chebyshev(Mean, Sd) UCL	12.62
97.5% Chebyshev(Mean, Sd) UCL	15.62	99% Chebyshev(Mean, Sd) UCL	21.53

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.62

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	8.283
Maximum	19.7	Median	3.99
SD	7.412	Std. Error of Mean	2.471
Coefficient of Variation	0.895	Skewness	0.681
Mean of logged Data	1.699	SD of logged Data	0.989

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.88	95% Adjusted-CLT UCL (Chen-1995)	12.95
		95% Modified-t UCL (Johnson-1978)	12.97

Nonparametric Distribution Free UCLs

95% CLT UCL	12.35	95% Jackknife UCL	12.88
95% Standard Bootstrap UCL	12.15	95% Bootstrap-t UCL	14.2
95% Hall's Bootstrap UCL	11.33	95% Percentile Bootstrap UCL	12.24
95% BCA Bootstrap UCL	12.61		
90% Chebyshev(Mean, Sd) UCL	15.7	95% Chebyshev(Mean, Sd) UCL	19.05
97.5% Chebyshev(Mean, Sd) UCL	23.71	99% Chebyshev(Mean, Sd) UCL	32.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.01	Mean	10.22
Maximum	24.2	Median	5.15
SD	8.928	Std. Error of Mean	2.976
Coefficient of Variation	0.873	Skewness	0.779
Mean of logged Data	1.961	SD of logged Data	0.907

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.76	95% Adjusted-CLT UCL (Chen-1995)	15.94
		95% Modified-t UCL (Johnson-1978)	15.89

Nonparametric Distribution Free UCLs

95% CLT UCL	15.12	95% Jackknife UCL	15.76
95% Standard Bootstrap UCL	14.87	95% Bootstrap-t UCL	17.25
95% Hall's Bootstrap UCL	13.95	95% Percentile Bootstrap UCL	14.91
95% BCA Bootstrap UCL	15.53		
90% Chebyshev(Mean, Sd) UCL	19.15	95% Chebyshev(Mean, Sd) UCL	23.2
97.5% Chebyshev(Mean, Sd) UCL	28.81	99% Chebyshev(Mean, Sd) UCL	39.83

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.01	Mean	7.487
Maximum	13.8	Median	6.19
SD	4.657	Std. Error of Mean	1.552
Coefficient of Variation	0.622	Skewness	0.381
Mean of logged Data	1.821	SD of logged Data	0.671

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.37	95% Adjusted-CLT UCL (Chen-1995)	10.25
		95% Modified-t UCL (Johnson-1978)	10.41

Nonparametric Distribution Free UCLs

95% CLT UCL	10.04	95% Jackknife UCL	10.37
95% Standard Bootstrap UCL	9.856	95% Bootstrap-t UCL	10.68
95% Hall's Bootstrap UCL	9.567	95% Percentile Bootstrap UCL	9.879
95% BCA Bootstrap UCL	10.04		
90% Chebyshev(Mean, Sd) UCL	12.14	95% Chebyshev(Mean, Sd) UCL	14.25
97.5% Chebyshev(Mean, Sd) UCL	17.18	99% Chebyshev(Mean, Sd) UCL	22.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	4.666
Maximum	10.6	Median	2.16
SD	3.513	Std. Error of Mean	1.171
Coefficient of Variation	0.753	Skewness	0.871
Mean of logged Data	1.297	SD of logged Data	0.724

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.843	95% Adjusted-CLT UCL (Chen-1995)	6.955

		95% Modified-t UCL (Johnson-1978)	6.9

Nonparametric Distribution Free UCLs

95% CLT UCL	6.592	95% Jackknife UCL	6.843
95% Standard Bootstrap UCL	6.449	95% Bootstrap-t UCL	7.54
95% Hall's Bootstrap UCL	6.084	95% Percentile Bootstrap UCL	6.541
95% BCA Bootstrap UCL	6.863		
90% Chebyshev(Mean, Sd) UCL	8.179	95% Chebyshev(Mean, Sd) UCL	9.77
97.5% Chebyshev(Mean, Sd) UCL	11.98	99% Chebyshev(Mean, Sd) UCL	16.32

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.77

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	7.852
Maximum	18.4	Median	3.54
SD	7.146	Std. Error of Mean	2.382
Coefficient of Variation	0.91	Skewness	0.75
Mean of logged Data	1.646	SD of logged Data	0.979

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.28	95% Adjusted-CLT UCL (Chen-1995)	12.41
		95% Modified-t UCL (Johnson-1978)	12.38

Nonparametric Distribution Free UCLs

95% CLT UCL	11.77	95% Jackknife UCL	12.28
95% Standard Bootstrap UCL	11.57	95% Bootstrap-t UCL	13.23
95% Hall's Bootstrap UCL	11.05	95% Percentile Bootstrap UCL	11.66
95% BCA Bootstrap UCL	12.12		
90% Chebyshev(Mean, Sd) UCL	15	95% Chebyshev(Mean, Sd) UCL	18.23
97.5% Chebyshev(Mean, Sd) UCL	22.73	99% Chebyshev(Mean, Sd) UCL	31.55

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.76	Mean	3.281
Maximum	4.26	Median	3.29
SD	0.411	Std. Error of Mean	0.137
Coefficient of Variation	0.125	Skewness	1.784
Mean of logged Data	1.182	SD of logged Data	0.117

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.536	95% Adjusted-CLT UCL (Chen-1995)	3.593
		95% Modified-t UCL (Johnson-1978)	3.549

Nonparametric Distribution Free UCLs

95% CLT UCL	3.506	95% Jackknife UCL	3.536
95% Standard Bootstrap UCL	3.492	95% Bootstrap-t UCL	3.676
95% Hall's Bootstrap UCL	4.653	95% Percentile Bootstrap UCL	3.506
95% BCA Bootstrap UCL	3.584		
90% Chebyshev(Mean, Sd) UCL	3.692	95% Chebyshev(Mean, Sd) UCL	3.878
97.5% Chebyshev(Mean, Sd) UCL	4.136	99% Chebyshev(Mean, Sd) UCL	4.643

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	10.07
Maximum	26.3	Median	3.44
SD	10.14	Std. Error of Mean	3.379
Coefficient of Variation	1.007	Skewness	0.795
Mean of logged Data	1.777	SD of logged Data	1.117

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.35	95% Adjusted-CLT UCL (Chen-1995)	16.58
		95% Modified-t UCL (Johnson-1978)	16.5

Nonparametric Distribution Free UCLs

95% CLT UCL	15.63	95% Jackknife UCL	16.35

95% Standard Bootstrap UCL	15.45	95% Bootstrap-t UCL	17.93
95% Hall's Bootstrap UCL	14.1	95% Percentile Bootstrap UCL	15.38
95% BCA Bootstrap UCL	15.82		
90% Chebyshev(Mean, Sd) UCL	20.21	95% Chebyshev(Mean, Sd) UCL	24.8
97.5% Chebyshev(Mean, Sd) UCL	31.17	99% Chebyshev(Mean, Sd) UCL	43.69

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.205	Mean	1.305
Maximum	1.4	Median	1.32
SD	0.0573	Std. Error of Mean	0.0191
Coefficient of Variation	0.0439	Skewness	-0.384
Mean of logged Data	0.265	SD of logged Data	0.0443

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.341	95% Adjusted-CLT UCL (Chen-1995)	1.334
		95% Modified-t UCL (Johnson-1978)	1.34

Nonparametric Distribution Free UCLs

95% CLT UCL	1.336	95% Jackknife UCL	1.341
95% Standard Bootstrap UCL	1.334	95% Bootstrap-t UCL	1.337
95% Hall's Bootstrap UCL	1.337	95% Percentile Bootstrap UCL	1.334
95% BCA Bootstrap UCL	1.33		
90% Chebyshev(Mean, Sd) UCL	1.362	95% Chebyshev(Mean, Sd) UCL	1.388
97.5% Chebyshev(Mean, Sd) UCL	1.424	99% Chebyshev(Mean, Sd) UCL	1.495

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	2.32	Mean	7.487
Maximum	17.1	Median	3.31
SD	6.167	Std. Error of Mean	2.056
Coefficient of Variation	0.824	Skewness	0.783
Mean of logged Data	1.702	SD of logged Data	0.832

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.31	95% Adjusted-CLT UCL (Chen-1995)	11.44
		95% Modified-t UCL (Johnson-1978)	11.4

Nonparametric Distribution Free UCLs

95% CLT UCL	10.87	95% Jackknife UCL	11.31
95% Standard Bootstrap UCL	10.7	95% Bootstrap-t UCL	12.15
95% Hall's Bootstrap UCL	9.87	95% Percentile Bootstrap UCL	10.69
95% BCA Bootstrap UCL	11.33		
90% Chebyshev(Mean, Sd) UCL	13.65	95% Chebyshev(Mean, Sd) UCL	16.45
97.5% Chebyshev(Mean, Sd) UCL	20.32	99% Chebyshev(Mean, Sd) UCL	27.94

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.823	Mean	1.883
Maximum	5.79	Median	1.24
SD	1.556	Std. Error of Mean	0.519
Coefficient of Variation	0.827	Skewness	2.397
Mean of logged Data	0.431	SD of logged Data	0.615

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.847	95% Adjusted-CLT UCL (Chen-1995)	3.179
		95% Modified-t UCL (Johnson-1978)	2.916

Nonparametric Distribution Free UCLs

95% CLT UCL	2.736	95% Jackknife UCL	2.847
95% Standard Bootstrap UCL	2.679	95% Bootstrap-t UCL	4.466

95% Hall's Bootstrap UCL	5.922	95% Percentile Bootstrap UCL	2.825
95% BCA Bootstrap UCL	3.267		
90% Chebyshev(Mean, Sd) UCL	3.439	95% Chebyshev(Mean, Sd) UCL	4.144
97.5% Chebyshev(Mean, Sd) UCL	5.122	99% Chebyshev(Mean, Sd) UCL	7.044

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.01	Mean	5.128
Maximum	11	Median	3.29
SD	3.072	Std. Error of Mean	1.024
Coefficient of Variation	0.599	Skewness	1.156
Mean of logged Data	1.497	SD of logged Data	0.531

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.032	95% Adjusted-CLT UCL (Chen-1995)	7.234
		95% Modified-t UCL (Johnson-1978)	7.098

Nonparametric Distribution Free UCLs

95% CLT UCL	6.812	95% Jackknife UCL	7.032
95% Standard Bootstrap UCL	6.709	95% Bootstrap-t UCL	7.796
95% Hall's Bootstrap UCL	6.248	95% Percentile Bootstrap UCL	6.603
95% BCA Bootstrap UCL	7.094		
90% Chebyshev(Mean, Sd) UCL	8.2	95% Chebyshev(Mean, Sd) UCL	9.592
97.5% Chebyshev(Mean, Sd) UCL	11.52	99% Chebyshev(Mean, Sd) UCL	15.32

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.592

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.54	Mean	9.611
Maximum	24.4	Median	3.55
SD	8.809	Std. Error of Mean	2.936

Coefficient of Variation	0.917	Skewness	0.861
Mean of logged Data	1.869	SD of logged Data	0.937

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.07	95% Adjusted-CLT UCL (Chen-1995)	15.34
		95% Modified-t UCL (Johnson-1978)	15.21

Nonparametric Distribution Free UCLs

95% CLT UCL	14.44	95% Jackknife UCL	15.07
95% Standard Bootstrap UCL	14.2	95% Bootstrap-t UCL	16.81
95% Hall's Bootstrap UCL	13.14	95% Percentile Bootstrap UCL	14.38
95% BCA Bootstrap UCL	15.01		
90% Chebyshev(Mean, Sd) UCL	18.42	95% Chebyshev(Mean, Sd) UCL	22.41
97.5% Chebyshev(Mean, Sd) UCL	27.95	99% Chebyshev(Mean, Sd) UCL	38.83

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	22.41

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:39:30 AM
From File	04194_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.2	Mean	43.38
Maximum	264	Median	15.5
SD	82.78	Std. Error of Mean	27.59
Coefficient of Variation	1.908	Skewness	2.994
Mean of logged Data	3.06	SD of logged Data	0.958

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	94.69	95% Adjusted-CLT UCL (Chen-1995)	118.2
		95% Modified-t UCL (Johnson-1978)	99.28

Nonparametric Distribution Free UCLs

95% CLT UCL	88.76	95% Jackknife UCL	94.69
95% Standard Bootstrap UCL	85.31	95% Bootstrap-t UCL	1543
95% Hall's Bootstrap UCL	825.9	95% Percentile Bootstrap UCL	97.99
95% BCA Bootstrap UCL	126.6		
90% Chebyshev(Mean, Sd) UCL	126.2	95% Chebyshev(Mean, Sd) UCL	163.7
97.5% Chebyshev(Mean, Sd) UCL	215.7	99% Chebyshev(Mean, Sd) UCL	317.9

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	163.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.1	Mean	10.44
Maximum	12.1	Median	10.2
SD	1.061	Std. Error of Mean	0.354
Coefficient of Variation	0.102	Skewness	0.59
Mean of logged Data	2.341	SD of logged Data	0.0999

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.1	95% Adjusted-CLT UCL (Chen-1995)	11.1
		95% Modified-t UCL (Johnson-1978)	11.11

Nonparametric Distribution Free UCLs

95% CLT UCL	11.02	95% Jackknife UCL	11.1
95% Standard Bootstrap UCL	10.99	95% Bootstrap-t UCL	11.31
95% Hall's Bootstrap UCL	11.43	95% Percentile Bootstrap UCL	11.06
95% BCA Bootstrap UCL	11.06		
90% Chebyshev(Mean, Sd) UCL	11.5	95% Chebyshev(Mean, Sd) UCL	11.98
97.5% Chebyshev(Mean, Sd) UCL	12.65	99% Chebyshev(Mean, Sd) UCL	13.96

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	43.4	Mean	54.31
Maximum	70.4	Median	54.9
SD	8.355	Std. Error of Mean	2.785
Coefficient of Variation	0.154	Skewness	0.669
Mean of logged Data	3.985	SD of logged Data	0.151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.49	95% Adjusted-CLT UCL (Chen-1995)	59.56
		95% Modified-t UCL (Johnson-1978)	59.59

Nonparametric Distribution Free UCLs

95% CLT UCL	58.89	95% Jackknife UCL	59.49
95% Standard Bootstrap UCL	58.61	95% Bootstrap-t UCL	60.19
95% Hall's Bootstrap UCL	60.96	95% Percentile Bootstrap UCL	58.72
95% BCA Bootstrap UCL	58.94		
90% Chebyshev(Mean, Sd) UCL	62.67	95% Chebyshev(Mean, Sd) UCL	66.45
97.5% Chebyshev(Mean, Sd) UCL	71.7	99% Chebyshev(Mean, Sd) UCL	82.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.747	Mean	1.393
Maximum	3.11	Median	1.03
SD	0.764	Std. Error of Mean	0.255
Coefficient of Variation	0.549	Skewness	1.64
Mean of logged Data	0.222	SD of logged Data	0.473

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.867	95% Adjusted-CLT UCL (Chen-1995)	1.961
		95% Modified-t UCL (Johnson-1978)	1.89

Nonparametric Distribution Free UCLs

95% CLT UCL	1.812	95% Jackknife UCL	1.867
95% Standard Bootstrap UCL	1.778	95% Bootstrap-t UCL	2.316
95% Hall's Bootstrap UCL	3.278	95% Percentile Bootstrap UCL	1.838
95% BCA Bootstrap UCL	1.956		
90% Chebyshev(Mean, Sd) UCL	2.157	95% Chebyshev(Mean, Sd) UCL	2.504
97.5% Chebyshev(Mean, Sd) UCL	2.984	99% Chebyshev(Mean, Sd) UCL	3.928

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.473	Mean	0.5
Maximum	0.525	Median	0.5
SD	0.0189	Std. Error of Mean	0.0063
Coefficient of Variation	0.0378	Skewness	0.0934
Mean of logged Data	-0.694	SD of logged Data	0.0378

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.512	95% Adjusted-CLT UCL (Chen-1995)	0.511
		95% Modified-t UCL (Johnson-1978)	0.512

Nonparametric Distribution Free UCLs

95% CLT UCL	0.51	95% Jackknife UCL	0.512
95% Standard Bootstrap UCL	0.51	95% Bootstrap-t UCL	0.512
95% Hall's Bootstrap UCL	0.51	95% Percentile Bootstrap UCL	0.51
95% BCA Bootstrap UCL	0.51		
90% Chebyshev(Mean, Sd) UCL	0.519	95% Chebyshev(Mean, Sd) UCL	0.528
97.5% Chebyshev(Mean, Sd) UCL	0.539	99% Chebyshev(Mean, Sd) UCL	0.563

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.4	Mean	1.972
Maximum	2.125	Median	2.035
SD	0.223	Std. Error of Mean	0.0744
Coefficient of Variation	0.113	Skewness	-2.567
Mean of logged Data	0.672	SD of logged Data	0.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.111	95% Adjusted-CLT UCL (Chen-1995)	2.027
		95% Modified-t UCL (Johnson-1978)	2.1

Nonparametric Distribution Free UCLs

95% CLT UCL	2.095	95% Jackknife UCL	2.111
95% Standard Bootstrap UCL	2.088	95% Bootstrap-t UCL	2.071
95% Hall's Bootstrap UCL	2.049	95% Percentile Bootstrap UCL	2.07
95% BCA Bootstrap UCL	2.046		
90% Chebyshev(Mean, Sd) UCL	2.196	95% Chebyshev(Mean, Sd) UCL	2.297
97.5% Chebyshev(Mean, Sd) UCL	2.437	99% Chebyshev(Mean, Sd) UCL	2.713

Suggested UCL to Use

95% Student's-t UCL	2.111	or 95% Modified-t UCL	2.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.965	Mean	2.74
Maximum	4.34	Median	2.125
SD	1.041	Std. Error of Mean	0.347
Coefficient of Variation	0.38	Skewness	0.884
Mean of logged Data	0.95	SD of logged Data	0.351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.385	95% Adjusted-CLT UCL (Chen-1995)	3.42
		95% Modified-t UCL (Johnson-1978)	3.403

Nonparametric Distribution Free UCLs

95% CLT UCL	3.311	95% Jackknife UCL	3.385
95% Standard Bootstrap UCL	3.286	95% Bootstrap-t UCL	3.501
95% Hall's Bootstrap UCL	3.077	95% Percentile Bootstrap UCL	3.275
95% BCA Bootstrap UCL	3.393		
90% Chebyshev(Mean, Sd) UCL	3.781	95% Chebyshev(Mean, Sd) UCL	4.253
97.5% Chebyshev(Mean, Sd) UCL	4.908	99% Chebyshev(Mean, Sd) UCL	6.194

Suggested UCL to Use

95% Student's-t UCL	3.385	or 95% Modified-t UCL	3.403

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.54	Mean	3.099
Maximum	5.7	Median	2.125
SD	1.697	Std. Error of Mean	0.566
Coefficient of Variation	0.547	Skewness	0.848
Mean of logged Data	1.009	SD of logged Data	0.509

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.151	95% Adjusted-CLT UCL (Chen-1995)	4.201
		95% Modified-t UCL (Johnson-1978)	4.178

Nonparametric Distribution Free UCLs

95% CLT UCL	4.03	95% Jackknife UCL	4.151
95% Standard Bootstrap UCL	3.98	95% Bootstrap-t UCL	4.355
95% Hall's Bootstrap UCL	3.692	95% Percentile Bootstrap UCL	3.921
95% BCA Bootstrap UCL	4.157		
90% Chebyshev(Mean, Sd) UCL	4.796	95% Chebyshev(Mean, Sd) UCL	5.565
97.5% Chebyshev(Mean, Sd) UCL	6.632	99% Chebyshev(Mean, Sd) UCL	8.727

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	5.565

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.02	Mean	4.508
Maximum	7.61	Median	3.27
SD	2.044	Std. Error of Mean	0.681
Coefficient of Variation	0.453	Skewness	0.89
Mean of logged Data	1.424	SD of logged Data	0.415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.775	95% Adjusted-CLT UCL (Chen-1995)	5.845
		95% Modified-t UCL (Johnson-1978)	5.808

Nonparametric Distribution Free UCLs

95% CLT UCL	5.628	95% Jackknife UCL	5.775
95% Standard Bootstrap UCL	5.579	95% Bootstrap-t UCL	6.092
95% Hall's Bootstrap UCL	5.172	95% Percentile Bootstrap UCL	5.511
95% BCA Bootstrap UCL	5.767		
90% Chebyshev(Mean, Sd) UCL	6.552	95% Chebyshev(Mean, Sd) UCL	7.478
97.5% Chebyshev(Mean, Sd) UCL	8.763	99% Chebyshev(Mean, Sd) UCL	11.29

Suggested UCL to Use

95% Student's-t UCL	5.775	or 95% Modified-t UCL	5.808

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.02	Mean	3.664
Maximum	4.98	Median	3.27
SD	0.782	Std. Error of Mean	0.261
Coefficient of Variation	0.214	Skewness	0.929
Mean of logged Data	1.28	SD of logged Data	0.201

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.149	95% Adjusted-CLT UCL (Chen-1995)	4.18
		95% Modified-t UCL (Johnson-1978)	4.163

Nonparametric Distribution Free UCLs

95% CLT UCL	4.093	95% Jackknife UCL	4.149
95% Standard Bootstrap UCL	4.064	95% Bootstrap-t UCL	4.285
95% Hall's Bootstrap UCL	3.943	95% Percentile Bootstrap UCL	4.079
95% BCA Bootstrap UCL	4.148		
90% Chebyshev(Mean, Sd) UCL	4.447	95% Chebyshev(Mean, Sd) UCL	4.801
97.5% Chebyshev(Mean, Sd) UCL	5.293	99% Chebyshev(Mean, Sd) UCL	6.259

Suggested UCL to Use

95% Student's-t UCL	4.149	or 95% Modified-t UCL	4.163

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.965	Mean	2.338
Maximum	3.02	Median	2.125
SD	0.438	Std. Error of Mean	0.146
Coefficient of Variation	0.187	Skewness	0.856
Mean of logged Data	0.835	SD of logged Data	0.179

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.609	95% Adjusted-CLT UCL (Chen-1995)	2.622

		95% Modified-t UCL (Johnson-1978)	2.616

Nonparametric Distribution Free UCLs

95% CLT UCL	2.578	95% Jackknife UCL	2.609
95% Standard Bootstrap UCL	2.562	95% Bootstrap-t UCL	2.68
95% Hall's Bootstrap UCL	2.495	95% Percentile Bootstrap UCL	2.567
95% BCA Bootstrap UCL	2.599		
90% Chebyshev(Mean, Sd) UCL	2.776	95% Chebyshev(Mean, Sd) UCL	2.974
97.5% Chebyshev(Mean, Sd) UCL	3.25	99% Chebyshev(Mean, Sd) UCL	3.791

Suggested UCL to Use

95% Student's-t UCL	2.609	or 95% Modified-t UCL	2.616

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.965	Mean	4.308
Maximum	10.1	Median	2.125
SD	3.508	Std. Error of Mean	1.169
Coefficient of Variation	0.814	Skewness	1.083
Mean of logged Data	1.199	SD of logged Data	0.731

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.482	95% Adjusted-CLT UCL (Chen-1995)	6.682
		95% Modified-t UCL (Johnson-1978)	6.553

Nonparametric Distribution Free UCLs

95% CLT UCL	6.231	95% Jackknife UCL	6.482
95% Standard Bootstrap UCL	6.108	95% Bootstrap-t UCL	8.214
95% Hall's Bootstrap UCL	5.5	95% Percentile Bootstrap UCL	6.12
95% BCA Bootstrap UCL	6.374		
90% Chebyshev(Mean, Sd) UCL	7.816	95% Chebyshev(Mean, Sd) UCL	9.405
97.5% Chebyshev(Mean, Sd) UCL	11.61	99% Chebyshev(Mean, Sd) UCL	15.94

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.405

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.95	Mean	3.123
Maximum	3.27	Median	3.13
SD	0.115	Std. Error of Mean	0.0384
Coefficient of Variation	0.0369	Skewness	-0.0263
Mean of logged Data	1.138	SD of logged Data	0.0369

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.194	95% Adjusted-CLT UCL (Chen-1995)	3.186
		95% Modified-t UCL (Johnson-1978)	3.194

Nonparametric Distribution Free UCLs

95% CLT UCL	3.186	95% Jackknife UCL	3.194
95% Standard Bootstrap UCL	3.182	95% Bootstrap-t UCL	3.194
95% Hall's Bootstrap UCL	3.179	95% Percentile Bootstrap UCL	3.181
95% BCA Bootstrap UCL	3.183		
90% Chebyshev(Mean, Sd) UCL	3.238	95% Chebyshev(Mean, Sd) UCL	3.29
97.5% Chebyshev(Mean, Sd) UCL	3.363	99% Chebyshev(Mean, Sd) UCL	3.505

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.98	Mean	4.409
Maximum	10.4	Median	2.125
SD	3.58	Std. Error of Mean	1.193
Coefficient of Variation	0.812	Skewness	0.955
Mean of logged Data	1.214	SD of logged Data	0.746

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.629	95% Adjusted-CLT UCL (Chen-1995)	6.778
		95% Modified-t UCL (Johnson-1978)	6.692

Nonparametric Distribution Free UCLs

95% CLT UCL	6.372	95% Jackknife UCL	6.629
95% Standard Bootstrap UCL	6.274	95% Bootstrap-t UCL	7.266
95% Hall's Bootstrap UCL	5.576	95% Percentile Bootstrap UCL	6.244
95% BCA Bootstrap UCL	6.776		
90% Chebyshev(Mean, Sd) UCL	7.989	95% Chebyshev(Mean, Sd) UCL	9.611
97.5% Chebyshev(Mean, Sd) UCL	11.86	99% Chebyshev(Mean, Sd) UCL	16.28

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 9.611

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.954	Mean	1.272
Maximum	1.71	Median	1.25
SD	0.196	Std. Error of Mean	0.0652
Coefficient of Variation	0.154	Skewness	1.111
Mean of logged Data	0.23	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.393	95% Adjusted-CLT UCL (Chen-1995)	1.405
		95% Modified-t UCL (Johnson-1978)	1.397

Nonparametric Distribution Free UCLs

95% CLT UCL	1.379	95% Jackknife UCL	1.393
95% Standard Bootstrap UCL	1.375	95% Bootstrap-t UCL	1.421
95% Hall's Bootstrap UCL	2.094	95% Percentile Bootstrap UCL	1.372
95% BCA Bootstrap UCL	1.403		
90% Chebyshev(Mean, Sd) UCL	1.467	95% Chebyshev(Mean, Sd) UCL	1.556
97.5% Chebyshev(Mean, Sd) UCL	1.679	99% Chebyshev(Mean, Sd) UCL	1.921

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8

		Number of Missing Observations	0
Minimum	3.02	Mean	3.557
Maximum	4.64	Median	3.27
SD	0.623	Std. Error of Mean	0.208
Coefficient of Variation	0.175	Skewness	0.949
Mean of logged Data	1.256	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.943	95% Adjusted-CLT UCL (Chen-1995)	3.968
		95% Modified-t UCL (Johnson-1978)	3.954

Nonparametric Distribution Free UCLs

95% CLT UCL	3.898	95% Jackknife UCL	3.943
95% Standard Bootstrap UCL	3.881	95% Bootstrap-t UCL	4.06
95% Hall's Bootstrap UCL	3.8	95% Percentile Bootstrap UCL	3.895
95% BCA Bootstrap UCL	3.926		
90% Chebyshev(Mean, Sd) UCL	4.18	95% Chebyshev(Mean, Sd) UCL	4.462
97.5% Chebyshev(Mean, Sd) UCL	4.854	99% Chebyshev(Mean, Sd) UCL	5.623

Suggested UCL to Use

95% Student's-t UCL	3.943	or 95% Modified-t UCL	3.954

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.905	Mean	3.419
Maximum	4.91	Median	4.54
SD	1.857	Std. Error of Mean	0.619
Coefficient of Variation	0.543	Skewness	-0.837
Mean of logged Data	1.007	SD of logged Data	0.795

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.57	95% Adjusted-CLT UCL (Chen-1995)	4.252
		95% Modified-t UCL (Johnson-1978)	4.541

Nonparametric Distribution Free UCLs

95% CLT UCL	4.437	95% Jackknife UCL	4.57
95% Standard Bootstrap UCL	4.364	95% Bootstrap-t UCL	4.266

95% Hall's Bootstrap UCL	4.124	95% Percentile Bootstrap UCL	4.28
95% BCA Bootstrap UCL	4.261		
90% Chebyshev(Mean, Sd) UCL	5.276	95% Chebyshev(Mean, Sd) UCL	6.117
97.5% Chebyshev(Mean, Sd) UCL	7.284	99% Chebyshev(Mean, Sd) UCL	9.577

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.117

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.02	Mean	3.821
Maximum	6.32	Median	3.27
SD	1.13	Std. Error of Mean	0.377
Coefficient of Variation	0.296	Skewness	1.649
Mean of logged Data	1.308	SD of logged Data	0.26

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.522	95% Adjusted-CLT UCL (Chen-1995)	4.662
		95% Modified-t UCL (Johnson-1978)	4.556

Nonparametric Distribution Free UCLs

95% CLT UCL	4.441	95% Jackknife UCL	4.522
95% Standard Bootstrap UCL	4.413	95% Bootstrap-t UCL	5.321
95% Hall's Bootstrap UCL	4.733	95% Percentile Bootstrap UCL	4.453
95% BCA Bootstrap UCL	4.656		
90% Chebyshev(Mean, Sd) UCL	4.951	95% Chebyshev(Mean, Sd) UCL	5.463
97.5% Chebyshev(Mean, Sd) UCL	6.174	99% Chebyshev(Mean, Sd) UCL	7.57

Suggested UCL to Use

95% Student's-t UCL	4.522	or 95% Modified-t UCL	4.556

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.02	Mean	4.66
Maximum	8.28	Median	3.27
SD	2.279	Std. Error of Mean	0.76
Coefficient of Variation	0.489	Skewness	0.912
Mean of logged Data	1.444	SD of logged Data	0.446

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.073	95% Adjusted-CLT UCL (Chen-1995)	6.156
		95% Modified-t UCL (Johnson-1978)	6.111

Nonparametric Distribution Free UCLs

95% CLT UCL	5.91	95% Jackknife UCL	6.073
95% Standard Bootstrap UCL	5.812	95% Bootstrap-t UCL	6.463
95% Hall's Bootstrap UCL	5.402	95% Percentile Bootstrap UCL	5.941
95% BCA Bootstrap UCL	6.119		
90% Chebyshev(Mean, Sd) UCL	6.939	95% Chebyshev(Mean, Sd) UCL	7.971
97.5% Chebyshev(Mean, Sd) UCL	9.404	99% Chebyshev(Mean, Sd) UCL	12.22

Suggested UCL to Use

95% Student's-t UCL	6.073	or 95% Modified-t UCL	6.111

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:40:46 AM
From File	4549A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.6	Mean	12.5
Maximum	14.3	Median	13
SD	1.424	Std. Error of Mean	0.475
Coefficient of Variation	0.114	Skewness	-0.162
Mean of logged Data	2.52	SD of logged Data	0.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.38	95% Adjusted-CLT UCL (Chen-1995)	13.25
		95% Modified-t UCL (Johnson-1978)	13.38

Nonparametric Distribution Free UCLs

95% CLT UCL	13.28	95% Jackknife UCL	13.38
95% Standard Bootstrap UCL	13.21	95% Bootstrap-t UCL	13.32
95% Hall's Bootstrap UCL	13.15	95% Percentile Bootstrap UCL	13.23
95% BCA Bootstrap UCL	13.21		
90% Chebyshev(Mean, Sd) UCL	13.92	95% Chebyshev(Mean, Sd) UCL	14.57
97.5% Chebyshev(Mean, Sd) UCL	15.46	99% Chebyshev(Mean, Sd) UCL	17.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.74	Mean	13.06
Maximum	20.9	Median	10.3
SD	5.133	Std. Error of Mean	1.711
Coefficient of Variation	0.393	Skewness	0.783

Mean of logged Data	2.506	SD of logged Data	0.369

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.25	95% Adjusted-CLT UCL (Chen-1995)	16.36
		95% Modified-t UCL (Johnson-1978)	16.32

Nonparametric Distribution Free UCLs

95% CLT UCL	15.88	95% Jackknife UCL	16.25
95% Standard Bootstrap UCL	15.73	95% Bootstrap-t UCL	16.91
95% Hall's Bootstrap UCL	14.97	95% Percentile Bootstrap UCL	15.63
95% BCA Bootstrap UCL	16.06		
90% Chebyshev(Mean, Sd) UCL	18.2	95% Chebyshev(Mean, Sd) UCL	20.52
97.5% Chebyshev(Mean, Sd) UCL	23.75	99% Chebyshev(Mean, Sd) UCL	30.09

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	39.8	Mean	59.63
Maximum	90.9	Median	52.3
SD	21.78	Std. Error of Mean	7.261
Coefficient of Variation	0.365	Skewness	0.693
Mean of logged Data	4.032	SD of logged Data	0.349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	73.14	95% Adjusted-CLT UCL (Chen-1995)	73.37
		95% Modified-t UCL (Johnson-1978)	73.42

Nonparametric Distribution Free UCLs

95% CLT UCL	71.58	95% Jackknife UCL	73.14
95% Standard Bootstrap UCL	70.48	95% Bootstrap-t UCL	75.52
95% Hall's Bootstrap UCL	68.85	95% Percentile Bootstrap UCL	71.63
95% BCA Bootstrap UCL	72.79		
90% Chebyshev(Mean, Sd) UCL	81.42	95% Chebyshev(Mean, Sd) UCL	91.28
97.5% Chebyshev(Mean, Sd) UCL	105	99% Chebyshev(Mean, Sd) UCL	131.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.626	Mean	1.495
Maximum	2.42	Median	1.66
SD	0.607	Std. Error of Mean	0.202
Coefficient of Variation	0.406	Skewness	-0.264
Mean of logged Data	0.312	SD of logged Data	0.476

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.871	95% Adjusted-CLT UCL (Chen-1995)	1.809
		95% Modified-t UCL (Johnson-1978)	1.868

Nonparametric Distribution Free UCLs

95% CLT UCL	1.828	95% Jackknife UCL	1.871
95% Standard Bootstrap UCL	1.812	95% Bootstrap-t UCL	1.831
95% Hall's Bootstrap UCL	1.799	95% Percentile Bootstrap UCL	1.803
95% BCA Bootstrap UCL	1.784		
90% Chebyshev(Mean, Sd) UCL	2.102	95% Chebyshev(Mean, Sd) UCL	2.377
97.5% Chebyshev(Mean, Sd) UCL	2.758	99% Chebyshev(Mean, Sd) UCL	3.508

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.442	Mean	0.564
Maximum	1.04	Median	0.52
SD	0.181	Std. Error of Mean	0.0603
Coefficient of Variation	0.321	Skewness	2.844
Mean of logged Data	-0.606	SD of logged Data	0.249

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.676	95% Adjusted-CLT UCL (Chen-1995)	0.724
		95% Modified-t UCL (Johnson-1978)	0.686

Nonparametric Distribution Free UCLs

95% CLT UCL	0.663	95% Jackknife UCL	0.676
95% Standard Bootstrap UCL	0.659	95% Bootstrap-t UCL	1.063
95% Hall's Bootstrap UCL	1.225	95% Percentile Bootstrap UCL	0.679
95% BCA Bootstrap UCL	0.734		
90% Chebyshev(Mean, Sd) UCL	0.745	95% Chebyshev(Mean, Sd) UCL	0.827
97.5% Chebyshev(Mean, Sd) UCL	0.941	99% Chebyshev(Mean, Sd) UCL	1.164

Suggested UCL to Use

95% Student's-t UCL	0.676	or 95% Modified-t UCL	0.686

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.62	Mean	3.569
Maximum	10.5	Median	2.14
SD	2.887	Std. Error of Mean	0.962
Coefficient of Variation	0.809	Skewness	2.111
Mean of logged Data	1.069	SD of logged Data	0.619

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.359	95% Adjusted-CLT UCL (Chen-1995)	5.876
		95% Modified-t UCL (Johnson-1978)	5.472

Nonparametric Distribution Free UCLs

95% CLT UCL	5.152	95% Jackknife UCL	5.359
95% Standard Bootstrap UCL	5.057	95% Bootstrap-t UCL	8.885
95% Hall's Bootstrap UCL	10.54	95% Percentile Bootstrap UCL	5.222
95% BCA Bootstrap UCL	6.012		
90% Chebyshev(Mean, Sd) UCL	6.456	95% Chebyshev(Mean, Sd) UCL	7.764
97.5% Chebyshev(Mean, Sd) UCL	9.579	99% Chebyshev(Mean, Sd) UCL	13.14

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.764

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	7.043
Maximum	23.6	Median	2.24
SD	7.367	Std. Error of Mean	2.456
Coefficient of Variation	1.046	Skewness	1.644
Mean of logged Data	1.51	SD of logged Data	0.973

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.61	95% Adjusted-CLT UCL (Chen-1995)	12.52
		95% Modified-t UCL (Johnson-1978)	11.83

Nonparametric Distribution Free UCLs

95% CLT UCL	11.08	95% Jackknife UCL	11.61
95% Standard Bootstrap UCL	10.76	95% Bootstrap-t UCL	14.96
95% Hall's Bootstrap UCL	13.2	95% Percentile Bootstrap UCL	11.29
95% BCA Bootstrap UCL	11.93		
90% Chebyshev(Mean, Sd) UCL	14.41	95% Chebyshev(Mean, Sd) UCL	17.75
97.5% Chebyshev(Mean, Sd) UCL	22.38	99% Chebyshev(Mean, Sd) UCL	31.48

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.75

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	11.38
Maximum	38.1	Median	3.84
SD	12.84	Std. Error of Mean	4.281
Coefficient of Variation	1.129	Skewness	1.355
Mean of logged Data	1.841	SD of logged Data	1.154

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.34	95% Adjusted-CLT UCL (Chen-1995)	20.48
		95% Modified-t UCL (Johnson-1978)	19.66

Nonparametric Distribution Free UCLs

95% CLT UCL	18.42	95% Jackknife UCL	19.34
95% Standard Bootstrap UCL	18.05	95% Bootstrap-t UCL	24.17
95% Hall's Bootstrap UCL	17.83	95% Percentile Bootstrap UCL	18.9
95% BCA Bootstrap UCL	20.29		
90% Chebyshev(Mean, Sd) UCL	24.22	95% Chebyshev(Mean, Sd) UCL	30.04
97.5% Chebyshev(Mean, Sd) UCL	38.11	99% Chebyshev(Mean, Sd) UCL	53.97

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	13.76
Maximum	45.5	Median	4.03
SD	15.55	Std. Error of Mean	5.184
Coefficient of Variation	1.13	Skewness	1.317
Mean of logged Data	2.059	SD of logged Data	1.098

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.4	95% Adjusted-CLT UCL (Chen-1995)	24.72
		95% Modified-t UCL (Johnson-1978)	23.78

Nonparametric Distribution Free UCLs

95% CLT UCL	22.29	95% Jackknife UCL	23.4
95% Standard Bootstrap UCL	21.78	95% Bootstrap-t UCL	28.64
95% Hall's Bootstrap UCL	20.61	95% Percentile Bootstrap UCL	22.69
95% BCA Bootstrap UCL	23.6		
90% Chebyshev(Mean, Sd) UCL	29.31	95% Chebyshev(Mean, Sd) UCL	36.36
97.5% Chebyshev(Mean, Sd) UCL	46.14	99% Chebyshev(Mean, Sd) UCL	65.34

Suggested UCL to Use

95% Hall's Bootstrap UCL	20.61

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	8.398
Maximum	25.4	Median	3.315
SD	8.239	Std. Error of Mean	2.746
Coefficient of Variation	0.981	Skewness	1.37
Mean of logged Data	1.753	SD of logged Data	0.871

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.5	95% Adjusted-CLT UCL (Chen-1995)	14.25
		95% Modified-t UCL (Johnson-1978)	13.71

Nonparametric Distribution Free UCLs

95% CLT UCL	12.91	95% Jackknife UCL	13.5
95% Standard Bootstrap UCL	12.74	95% Bootstrap-t UCL	16.44
95% Hall's Bootstrap UCL	12.15	95% Percentile Bootstrap UCL	13.09
95% BCA Bootstrap UCL	13.71		
90% Chebyshev(Mean, Sd) UCL	16.64	95% Chebyshev(Mean, Sd) UCL	20.37
97.5% Chebyshev(Mean, Sd) UCL	25.55	99% Chebyshev(Mean, Sd) UCL	35.72

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	20.37

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	5.333
Maximum	18.9	Median	2.155
SD	5.71	Std. Error of Mean	1.903
Coefficient of Variation	1.071	Skewness	2.024
Mean of logged Data	1.299	SD of logged Data	0.846

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.872	95% Adjusted-CLT UCL (Chen-1995)	9.836
		95% Modified-t UCL (Johnson-1978)	9.086

Nonparametric Distribution Free UCLs

95% CLT UCL	8.464	95% Jackknife UCL	8.872
95% Standard Bootstrap UCL	8.283	95% Bootstrap-t UCL	12.79
95% Hall's Bootstrap UCL	11.93	95% Percentile Bootstrap UCL	8.473
95% BCA Bootstrap UCL	9.752		
90% Chebyshev(Mean, Sd) UCL	11.04	95% Chebyshev(Mean, Sd) UCL	13.63
97.5% Chebyshev(Mean, Sd) UCL	17.22	99% Chebyshev(Mean, Sd) UCL	24.27

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.63

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	10.67
Maximum	36.9	Median	3.36
SD	12.12	Std. Error of Mean	4.04
Coefficient of Variation	1.136	Skewness	1.493
Mean of logged Data	1.788	SD of logged Data	1.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.18	95% Adjusted-CLT UCL (Chen-1995)	19.46
		95% Modified-t UCL (Johnson-1978)	18.51

Nonparametric Distribution Free UCLs

95% CLT UCL	17.31	95% Jackknife UCL	18.18
95% Standard Bootstrap UCL	16.94	95% Bootstrap-t UCL	22.81
95% Hall's Bootstrap UCL	17.96	95% Percentile Bootstrap UCL	17.59
95% BCA Bootstrap UCL	19.53		
90% Chebyshev(Mean, Sd) UCL	22.79	95% Chebyshev(Mean, Sd) UCL	28.27
97.5% Chebyshev(Mean, Sd) UCL	35.89	99% Chebyshev(Mean, Sd) UCL	50.86

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	3.528
Maximum	6.02	Median	3.255
SD	0.941	Std. Error of Mean	0.314
Coefficient of Variation	0.267	Skewness	2.916
Mean of logged Data	1.237	SD of logged Data	0.212

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.111	95% Adjusted-CLT UCL (Chen-1995)	4.37
		95% Modified-t UCL (Johnson-1978)	4.162

Nonparametric Distribution Free UCLs

95% CLT UCL	4.044	95% Jackknife UCL	4.111
95% Standard Bootstrap UCL	4.017	95% Bootstrap-t UCL	6.788
95% Hall's Bootstrap UCL	7.44	95% Percentile Bootstrap UCL	4.134
95% BCA Bootstrap UCL	4.191		
90% Chebyshev(Mean, Sd) UCL	4.469	95% Chebyshev(Mean, Sd) UCL	4.896
97.5% Chebyshev(Mean, Sd) UCL	5.487	99% Chebyshev(Mean, Sd) UCL	6.65

Suggested UCL to Use

95% Student's-t UCL	4.111	or 95% Modified-t UCL	4.162

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	13.23
Maximum	50.6	Median	3.68
SD	16.36	Std. Error of Mean	5.455
Coefficient of Variation	1.237	Skewness	1.754
Mean of logged Data	1.908	SD of logged Data	1.234

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	23.37	95% Adjusted-CLT UCL (Chen-1995)	25.61
		95% Modified-t UCL (Johnson-1978)	23.91

Nonparametric Distribution Free UCLs

95% CLT UCL	22.2	95% Jackknife UCL	23.37
95% Standard Bootstrap UCL	21.68	95% Bootstrap-t UCL	32.33
95% Hall's Bootstrap UCL	28.03	95% Percentile Bootstrap UCL	22.36
95% BCA Bootstrap UCL	25.65		
90% Chebyshev(Mean, Sd) UCL	29.59	95% Chebyshev(Mean, Sd) UCL	37.01
97.5% Chebyshev(Mean, Sd) UCL	47.3	99% Chebyshev(Mean, Sd) UCL	67.5

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.877	Mean	1.234
Maximum	1.33	Median	1.275
SD	0.141	Std. Error of Mean	0.0472
Coefficient of Variation	0.115	Skewness	-2.434
Mean of logged Data	0.203	SD of logged Data	0.131

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.322	95% Adjusted-CLT UCL (Chen-1995)	1.271
		95% Modified-t UCL (Johnson-1978)	1.315

Nonparametric Distribution Free UCLs

95% CLT UCL	1.312	95% Jackknife UCL	1.322
95% Standard Bootstrap UCL	1.308	95% Bootstrap-t UCL	1.292
95% Hall's Bootstrap UCL	1.285	95% Percentile Bootstrap UCL	1.294
95% BCA Bootstrap UCL	1.284		
90% Chebyshev(Mean, Sd) UCL	1.376	95% Chebyshev(Mean, Sd) UCL	1.44
97.5% Chebyshev(Mean, Sd) UCL	1.529	99% Chebyshev(Mean, Sd) UCL	1.703

Suggested UCL to Use

95% Student's-t UCL	1.322	or 95% Modified-t UCL	1.315

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.25	Mean	8.998
Maximum	28.2	Median	3.315
SD	9.547	Std. Error of Mean	3.182
Coefficient of Variation	1.061	Skewness	1.311
Mean of logged Data	1.732	SD of logged Data	0.982

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.92	95% Adjusted-CLT UCL (Chen-1995)	15.72
		95% Modified-t UCL (Johnson-1978)	15.15

Nonparametric Distribution Free UCLs

95% CLT UCL	14.23	95% Jackknife UCL	14.92
95% Standard Bootstrap UCL	13.93	95% Bootstrap-t UCL	19.3
95% Hall's Bootstrap UCL	13.04	95% Percentile Bootstrap UCL	13.87
95% BCA Bootstrap UCL	14.91		
90% Chebyshev(Mean, Sd) UCL	18.54	95% Chebyshev(Mean, Sd) UCL	22.87
97.5% Chebyshev(Mean, Sd) UCL	28.87	99% Chebyshev(Mean, Sd) UCL	40.66

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	22.87

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.669	Mean	1.172
Maximum	2.54	Median	0.936
SD	0.603	Std. Error of Mean	0.201
Coefficient of Variation	0.514	Skewness	1.634
Mean of logged Data	0.0616	SD of logged Data	0.449

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.546	95% Adjusted-CLT UCL (Chen-1995)	1.619

		95% Modified-t UCL (Johnson-1978)	1.564

Nonparametric Distribution Free UCLs

95% CLT UCL	1.503	95% Jackknife UCL	1.546
95% Standard Bootstrap UCL	1.485	95% Bootstrap-t UCL	1.76
95% Hall's Bootstrap UCL	2.108	95% Percentile Bootstrap UCL	1.494
95% BCA Bootstrap UCL	1.597		
90% Chebyshev(Mean, Sd) UCL	1.775	95% Chebyshev(Mean, Sd) UCL	2.048
97.5% Chebyshev(Mean, Sd) UCL	2.427	99% Chebyshev(Mean, Sd) UCL	3.171

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	6.177
Maximum	18.3	Median	3.315
SD	5.033	Std. Error of Mean	1.678
Coefficient of Variation	0.815	Skewness	2.103
Mean of logged Data	1.611	SD of logged Data	0.632

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.297	95% Adjusted-CLT UCL (Chen-1995)	10.19
		95% Modified-t UCL (Johnson-1978)	9.493

Nonparametric Distribution Free UCLs

95% CLT UCL	8.936	95% Jackknife UCL	9.297
95% Standard Bootstrap UCL	8.737	95% Bootstrap-t UCL	12.91
95% Hall's Bootstrap UCL	17.21	95% Percentile Bootstrap UCL	8.964
95% BCA Bootstrap UCL	10.11		
90% Chebyshev(Mean, Sd) UCL	11.21	95% Chebyshev(Mean, Sd) UCL	13.49
97.5% Chebyshev(Mean, Sd) UCL	16.65	99% Chebyshev(Mean, Sd) UCL	22.87

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.49

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.015	Mean	13.36
Maximum	48.2	Median	3.68
SD	15.1	Std. Error of Mean	5.032
Coefficient of Variation	1.13	Skewness	1.772
Mean of logged Data	2.062	SD of logged Data	1.078

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.72	95% Adjusted-CLT UCL (Chen-1995)	24.81
		95% Modified-t UCL (Johnson-1978)	23.21

Nonparametric Distribution Free UCLs

95% CLT UCL	21.64	95% Jackknife UCL	22.72
95% Standard Bootstrap UCL	21.1	95% Bootstrap-t UCL	29.98
95% Hall's Bootstrap UCL	48.47	95% Percentile Bootstrap UCL	21.55
95% BCA Bootstrap UCL	23.99		
90% Chebyshev(Mean, Sd) UCL	28.46	95% Chebyshev(Mean, Sd) UCL	35.29
97.5% Chebyshev(Mean, Sd) UCL	44.79	99% Chebyshev(Mean, Sd) UCL	63.43

Suggested UCL to Use

95% Hall's Bootstrap UCL	48.47

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:42:02 AM
From File	04558_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	14.1	Mean	20.01
Maximum	55.4	Median	14.6
SD	13.4	Std. Error of Mean	4.467
Coefficient of Variation	0.67	Skewness	2.892
Mean of logged Data	2.881	SD of logged Data	0.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.32	95% Adjusted-CLT UCL (Chen-1995)	31.96
		95% Modified-t UCL (Johnson-1978)	29.04

Nonparametric Distribution Free UCLs

95% CLT UCL	27.36	95% Jackknife UCL	28.32
95% Standard Bootstrap UCL	27.11	95% Bootstrap-t UCL	71.98
95% Hall's Bootstrap UCL	68.08	95% Percentile Bootstrap UCL	28.53
95% BCA Bootstrap UCL	33.18		
90% Chebyshev(Mean, Sd) UCL	33.41	95% Chebyshev(Mean, Sd) UCL	39.48
97.5% Chebyshev(Mean, Sd) UCL	47.91	99% Chebyshev(Mean, Sd) UCL	64.46

Suggested UCL to Use

95% Student's-t UCL	28.32	or 95% Modified-t UCL	29.04

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.7	Mean	30.87
Maximum	56	Median	34.5
SD	13.55	Std. Error of Mean	4.516
Coefficient of Variation	0.439	Skewness	0.339
Mean of logged Data	3.333	SD of logged Data	0.485

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.26	95% Adjusted-CLT UCL (Chen-1995)	38.84
		95% Modified-t UCL (Johnson-1978)	39.35

Nonparametric Distribution Free UCLs

95% CLT UCL	38.29	95% Jackknife UCL	39.26
95% Standard Bootstrap UCL	37.88	95% Bootstrap-t UCL	39.31
95% Hall's Bootstrap UCL	39.55	95% Percentile Bootstrap UCL	37.81
95% BCA Bootstrap UCL	38.03		
90% Chebyshev(Mean, Sd) UCL	44.41	95% Chebyshev(Mean, Sd) UCL	50.55
97.5% Chebyshev(Mean, Sd) UCL	59.07	99% Chebyshev(Mean, Sd) UCL	75.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	52.5	Mean	80.43
Maximum	133	Median	66.7
SD	32.09	Std. Error of Mean	10.7
Coefficient of Variation	0.399	Skewness	0.865
Mean of logged Data	4.323	SD of logged Data	0.373

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	100.3	95% Adjusted-CLT UCL (Chen-1995)	101.3
		95% Modified-t UCL (Johnson-1978)	100.8

Nonparametric Distribution Free UCLs

95% CLT UCL	98.03	95% Jackknife UCL	100.3
95% Standard Bootstrap UCL	96.82	95% Bootstrap-t UCL	107.3
95% Hall's Bootstrap UCL	93.8	95% Percentile Bootstrap UCL	97.46
95% BCA Bootstrap UCL	100.4		
90% Chebyshev(Mean, Sd) UCL	112.5	95% Chebyshev(Mean, Sd) UCL	127.1
97.5% Chebyshev(Mean, Sd) UCL	147.2	99% Chebyshev(Mean, Sd) UCL	186.9

Suggested UCL to Use

95% Student's-t UCL	100.3	or 95% Modified-t UCL	100.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.657	Mean	1.871
Maximum	3.28	Median	1.91
SD	0.917	Std. Error of Mean	0.306
Coefficient of Variation	0.49	Skewness	0.0122
Mean of logged Data	0.494	SD of logged Data	0.581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.44	95% Adjusted-CLT UCL (Chen-1995)	2.375
		95% Modified-t UCL (Johnson-1978)	2.44

Nonparametric Distribution Free UCLs

95% CLT UCL	2.374	95% Jackknife UCL	2.44
95% Standard Bootstrap UCL	2.356	95% Bootstrap-t UCL	2.457
95% Hall's Bootstrap UCL	2.367	95% Percentile Bootstrap UCL	2.337
95% BCA Bootstrap UCL	2.315		
90% Chebyshev(Mean, Sd) UCL	2.788	95% Chebyshev(Mean, Sd) UCL	3.204
97.5% Chebyshev(Mean, Sd) UCL	3.781	99% Chebyshev(Mean, Sd) UCL	4.913

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.495	Mean	1.064
Maximum	2.51	Median	0.806
SD	0.676	Std. Error of Mean	0.225
Coefficient of Variation	0.635	Skewness	1.425
Mean of logged Data	-0.0934	SD of logged Data	0.573

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.482	95% Adjusted-CLT UCL (Chen-1995)	1.548
		95% Modified-t UCL (Johnson-1978)	1.5

Nonparametric Distribution Free UCLs

95% CLT UCL	1.434	95% Jackknife UCL	1.482
95% Standard Bootstrap UCL	1.412	95% Bootstrap-t UCL	1.858
95% Hall's Bootstrap UCL	1.968	95% Percentile Bootstrap UCL	1.437
95% BCA Bootstrap UCL	1.52		
90% Chebyshev(Mean, Sd) UCL	1.739	95% Chebyshev(Mean, Sd) UCL	2.045
97.5% Chebyshev(Mean, Sd) UCL	2.47	99% Chebyshev(Mean, Sd) UCL	3.305

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	4.081
Maximum	12.2	Median	2.31
SD	3.43	Std. Error of Mean	1.143
Coefficient of Variation	0.841	Skewness	2.021
Mean of logged Data	1.182	SD of logged Data	0.651

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.207	95% Adjusted-CLT UCL (Chen-1995)	6.784
		95% Modified-t UCL (Johnson-1978)	6.335

Nonparametric Distribution Free UCLs

95% CLT UCL	5.961	95% Jackknife UCL	6.207
95% Standard Bootstrap UCL	5.843	95% Bootstrap-t UCL	9.762
95% Hall's Bootstrap UCL	11.85	95% Percentile Bootstrap UCL	6.154
95% BCA Bootstrap UCL	6.786		
90% Chebyshev(Mean, Sd) UCL	7.51	95% Chebyshev(Mean, Sd) UCL	9.064
97.5% Chebyshev(Mean, Sd) UCL	11.22	99% Chebyshev(Mean, Sd) UCL	15.46

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.064

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	39.87
Maximum	128	Median	26.9
SD	40.5	Std. Error of Mean	13.5
Coefficient of Variation	1.016	Skewness	1.454
Mean of logged Data	3.052	SD of logged Data	1.406

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.97	95% Adjusted-CLT UCL (Chen-1995)	69.06
		95% Modified-t UCL (Johnson-1978)	66.06

Nonparametric Distribution Free UCLs

95% CLT UCL	62.07	95% Jackknife UCL	64.97
95% Standard Bootstrap UCL	59.89	95% Bootstrap-t UCL	84.87
95% Hall's Bootstrap UCL	168.4	95% Percentile Bootstrap UCL	61.31
95% BCA Bootstrap UCL	68.02		
90% Chebyshev(Mean, Sd) UCL	80.36	95% Chebyshev(Mean, Sd) UCL	98.71
97.5% Chebyshev(Mean, Sd) UCL	124.2	99% Chebyshev(Mean, Sd) UCL	174.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.66	Mean	48.44
Maximum	137	Median	36.7
SD	45.06	Std. Error of Mean	15.02
Coefficient of Variation	0.93	Skewness	1.031
Mean of logged Data	3.231	SD of logged Data	1.496

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	76.37	95% Adjusted-CLT UCL (Chen-1995)	78.66
		95% Modified-t UCL (Johnson-1978)	77.23

Nonparametric Distribution Free UCLs

95% CLT UCL	73.14	95% Jackknife UCL	76.37
95% Standard Bootstrap UCL	71.51	95% Bootstrap-t UCL	91.44
95% Hall's Bootstrap UCL	97.06	95% Percentile Bootstrap UCL	73.94
95% BCA Bootstrap UCL	76.68		
90% Chebyshev(Mean, Sd) UCL	93.5	95% Chebyshev(Mean, Sd) UCL	113.9
97.5% Chebyshev(Mean, Sd) UCL	142.2	99% Chebyshev(Mean, Sd) UCL	197.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.185	Mean	68.65
Maximum	193	Median	51.7
SD	63.7	Std. Error of Mean	21.23
Coefficient of Variation	0.928	Skewness	1.016
Mean of logged Data	3.61	SD of logged Data	1.432

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	108.1	95% Adjusted-CLT UCL (Chen-1995)	111.3
		95% Modified-t UCL (Johnson-1978)	109.3

Nonparametric Distribution Free UCLs

95% CLT UCL	103.6	95% Jackknife UCL	108.1
95% Standard Bootstrap UCL	101.9	95% Bootstrap-t UCL	126
95% Hall's Bootstrap UCL	132.3	95% Percentile Bootstrap UCL	101.3
95% BCA Bootstrap UCL	107.3		
90% Chebyshev(Mean, Sd) UCL	132.3	95% Chebyshev(Mean, Sd) UCL	161.2
97.5% Chebyshev(Mean, Sd) UCL	201.2	99% Chebyshev(Mean, Sd) UCL	279.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	31.84
Maximum	81.2	Median	25.6
SD	28.12	Std. Error of Mean	9.373
Coefficient of Variation	0.883	Skewness	0.779
Mean of logged Data	2.96	SD of logged Data	1.207

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.27	95% Adjusted-CLT UCL (Chen-1995)	49.86
		95% Modified-t UCL (Johnson-1978)	49.68

Nonparametric Distribution Free UCLs

95% CLT UCL	47.26	95% Jackknife UCL	49.27
95% Standard Bootstrap UCL	46.61	95% Bootstrap-t UCL	54.67
95% Hall's Bootstrap UCL	49.76	95% Percentile Bootstrap UCL	47.26
95% BCA Bootstrap UCL	47.92		
90% Chebyshev(Mean, Sd) UCL	59.96	95% Chebyshev(Mean, Sd) UCL	72.7
97.5% Chebyshev(Mean, Sd) UCL	90.38	99% Chebyshev(Mean, Sd) UCL	125.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	25.19
Maximum	77.4	Median	18.1
SD	24.57	Std. Error of Mean	8.189
Coefficient of Variation	0.975	Skewness	1.337
Mean of logged Data	2.67	SD of logged Data	1.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.41	95% Adjusted-CLT UCL (Chen-1995)	42.55
		95% Modified-t UCL (Johnson-1978)	41.02

Nonparametric Distribution Free UCLs

95% CLT UCL	38.66	95% Jackknife UCL	40.41
95% Standard Bootstrap UCL	38.06	95% Bootstrap-t UCL	49.31
95% Hall's Bootstrap UCL	62.04	95% Percentile Bootstrap UCL	38.75
95% BCA Bootstrap UCL	41.44		
90% Chebyshev(Mean, Sd) UCL	49.75	95% Chebyshev(Mean, Sd) UCL	60.88
97.5% Chebyshev(Mean, Sd) UCL	76.33	99% Chebyshev(Mean, Sd) UCL	106.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	49.99
Maximum	151	Median	35.9
SD	48.77	Std. Error of Mean	16.26
Coefficient of Variation	0.976	Skewness	1.219
Mean of logged Data	3.263	SD of logged Data	1.459

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	80.22	95% Adjusted-CLT UCL (Chen-1995)	83.79
		95% Modified-t UCL (Johnson-1978)	81.32

Nonparametric Distribution Free UCLs

95% CLT UCL	76.73	95% Jackknife UCL	80.22
95% Standard Bootstrap UCL	74.23	95% Bootstrap-t UCL	94.07
95% Hall's Bootstrap UCL	101.5	95% Percentile Bootstrap UCL	77.28
95% BCA Bootstrap UCL	80.97		
90% Chebyshev(Mean, Sd) UCL	98.76	95% Chebyshev(Mean, Sd) UCL	120.8
97.5% Chebyshev(Mean, Sd) UCL	151.5	99% Chebyshev(Mean, Sd) UCL	211.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	10.14

Maximum	26.8	Median	7.2
SD	8.293	Std. Error of Mean	2.764
Coefficient of Variation	0.818	Skewness	1.223
Mean of logged Data	2.032	SD of logged Data	0.793

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.28	95% Adjusted-CLT UCL (Chen-1995)	15.89
		95% Modified-t UCL (Johnson-1978)	15.46

Nonparametric Distribution Free UCLs

95% CLT UCL	14.68	95% Jackknife UCL	15.28
95% Standard Bootstrap UCL	14.55	95% Bootstrap-t UCL	19.05
95% Hall's Bootstrap UCL	15.88	95% Percentile Bootstrap UCL	14.69
95% BCA Bootstrap UCL	16.25		
90% Chebyshev(Mean, Sd) UCL	18.43	95% Chebyshev(Mean, Sd) UCL	22.19
97.5% Chebyshev(Mean, Sd) UCL	27.4	99% Chebyshev(Mean, Sd) UCL	37.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	50.76
Maximum	166	Median	33.3
SD	52.95	Std. Error of Mean	17.65
Coefficient of Variation	1.043	Skewness	1.465
Mean of logged Data	3.255	SD of logged Data	1.453

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	83.58	95% Adjusted-CLT UCL (Chen-1995)	89
		95% Modified-t UCL (Johnson-1978)	85.02

Nonparametric Distribution Free UCLs

95% CLT UCL	79.79	95% Jackknife UCL	83.58
95% Standard Bootstrap UCL	78.37	95% Bootstrap-t UCL	108.9
95% Hall's Bootstrap UCL	202.4	95% Percentile Bootstrap UCL	81.32
95% BCA Bootstrap UCL	85.07		

90% Chebyshev(Mean, Sd) UCL	103.7	95% Chebyshev(Mean, Sd) UCL	127.7
97.5% Chebyshev(Mean, Sd) UCL	161	99% Chebyshev(Mean, Sd) UCL	226.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.995	Mean	1.775
Maximum	2.93	Median	1.335
SD	0.782	Std. Error of Mean	0.261
Coefficient of Variation	0.441	Skewness	0.826
Mean of logged Data	0.494	SD of logged Data	0.413

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.26	95% Adjusted-CLT UCL (Chen-1995)	2.281
		95% Modified-t UCL (Johnson-1978)	2.272

Nonparametric Distribution Free UCLs

95% CLT UCL	2.204	95% Jackknife UCL	2.26
95% Standard Bootstrap UCL	2.174	95% Bootstrap-t UCL	2.39
95% Hall's Bootstrap UCL	2.08	95% Percentile Bootstrap UCL	2.199
95% BCA Bootstrap UCL	2.243		
90% Chebyshev(Mean, Sd) UCL	2.557	95% Chebyshev(Mean, Sd) UCL	2.912
97.5% Chebyshev(Mean, Sd) UCL	3.403	99% Chebyshev(Mean, Sd) UCL	4.369

Suggested UCL to Use

95% Student's-t UCL	2.26	or 95% Modified-t UCL	2.272

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	34.44
Maximum	94.3	Median	27.7
SD	31.38	Std. Error of Mean	10.46
Coefficient of Variation	0.911	Skewness	0.944
Mean of logged Data	2.985	SD of logged Data	1.308

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.88	95% Adjusted-CLT UCL (Chen-1995)	55.16
		95% Modified-t UCL (Johnson-1978)	54.43

Nonparametric Distribution Free UCLs

95% CLT UCL	51.64	95% Jackknife UCL	53.88
95% Standard Bootstrap UCL	50.34	95% Bootstrap-t UCL	62.29
95% Hall's Bootstrap UCL	59.15	95% Percentile Bootstrap UCL	50.2
95% BCA Bootstrap UCL	53.34		
90% Chebyshev(Mean, Sd) UCL	65.81	95% Chebyshev(Mean, Sd) UCL	80.02
97.5% Chebyshev(Mean, Sd) UCL	99.75	99% Chebyshev(Mean, Sd) UCL	138.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.17	Mean	2.846
Maximum	5.97	Median	1.93
SD	1.731	Std. Error of Mean	0.577
Coefficient of Variation	0.608	Skewness	0.739
Mean of logged Data	0.88	SD of logged Data	0.611

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.918	95% Adjusted-CLT UCL (Chen-1995)	3.946
		95% Modified-t UCL (Johnson-1978)	3.942

Nonparametric Distribution Free UCLs

95% CLT UCL	3.795	95% Jackknife UCL	3.918
95% Standard Bootstrap UCL	3.741	95% Bootstrap-t UCL	4.143
95% Hall's Bootstrap UCL	3.737	95% Percentile Bootstrap UCL	3.671
95% BCA Bootstrap UCL	3.832		
90% Chebyshev(Mean, Sd) UCL	4.576	95% Chebyshev(Mean, Sd) UCL	5.36
97.5% Chebyshev(Mean, Sd) UCL	6.449	99% Chebyshev(Mean, Sd) UCL	8.586

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	15.01
Maximum	44.7	Median	10.7
SD	13.85	Std. Error of Mean	4.615
Coefficient of Variation	0.923	Skewness	1.423
Mean of logged Data	2.323	SD of logged Data	0.958

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.59	95% Adjusted-CLT UCL (Chen-1995)	24.94
		95% Modified-t UCL (Johnson-1978)	23.95

Nonparametric Distribution Free UCLs

95% CLT UCL	22.6	95% Jackknife UCL	23.59
95% Standard Bootstrap UCL	22.33	95% Bootstrap-t UCL	30.07
95% Hall's Bootstrap UCL	48.21	95% Percentile Bootstrap UCL	22.35
95% BCA Bootstrap UCL	24.28		
90% Chebyshev(Mean, Sd) UCL	28.85	95% Chebyshev(Mean, Sd) UCL	35.12
97.5% Chebyshev(Mean, Sd) UCL	43.83	99% Chebyshev(Mean, Sd) UCL	60.92

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.185	Mean	52.69
Maximum	160	Median	37.6
SD	51.57	Std. Error of Mean	17.19
Coefficient of Variation	0.979	Skewness	1.267
Mean of logged Data	3.363	SD of logged Data	1.358

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	84.65	95% Adjusted-CLT UCL (Chen-1995)	88.72
		95% Modified-t UCL (Johnson-1978)	85.86

Nonparametric Distribution Free UCLs

95% CLT UCL	80.96	95% Jackknife UCL	84.65
95% Standard Bootstrap UCL	79.17	95% Bootstrap-t UCL	104.9
95% Hall's Bootstrap UCL	122.9	95% Percentile Bootstrap UCL	79.81
95% BCA Bootstrap UCL	82.84		
90% Chebyshev(Mean, Sd) UCL	104.3	95% Chebyshev(Mean, Sd) UCL	127.6
97.5% Chebyshev(Mean, Sd) UCL	160	99% Chebyshev(Mean, Sd) UCL	223.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:47:08 AM
From File	04588_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.3	Mean	12.96
Maximum	19.5	Median	12.1
SD	2.587	Std. Error of Mean	0.862
Coefficient of Variation	0.2	Skewness	2.48
Mean of logged Data	2.547	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.56	95% Adjusted-CLT UCL (Chen-1995)	15.14
		95% Modified-t UCL (Johnson-1978)	14.68

Nonparametric Distribution Free UCLs

95% CLT UCL	14.37	95% Jackknife UCL	14.56
95% Standard Bootstrap UCL	14.33	95% Bootstrap-t UCL	18.4
95% Hall's Bootstrap UCL	20.56	95% Percentile Bootstrap UCL	14.44
95% BCA Bootstrap UCL	15.21		
90% Chebyshev(Mean, Sd) UCL	15.54	95% Chebyshev(Mean, Sd) UCL	16.71
97.5% Chebyshev(Mean, Sd) UCL	18.34	99% Chebyshev(Mean, Sd) UCL	21.54

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.26	Mean	9.697
Maximum	11.7	Median	9.28
SD	1.243	Std. Error of Mean	0.414
Coefficient of Variation	0.128	Skewness	0.397
Mean of logged Data	2.265	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.47	95% Adjusted-CLT UCL (Chen-1995)	10.44
		95% Modified-t UCL (Johnson-1978)	10.48

Nonparametric Distribution Free UCLs

95% CLT UCL	10.38	95% Jackknife UCL	10.47
95% Standard Bootstrap UCL	10.34	95% Bootstrap-t UCL	10.6
95% Hall's Bootstrap UCL	10.33	95% Percentile Bootstrap UCL	10.38
95% BCA Bootstrap UCL	10.37		
90% Chebyshev(Mean, Sd) UCL	10.94	95% Chebyshev(Mean, Sd) UCL	11.5
97.5% Chebyshev(Mean, Sd) UCL	12.28	99% Chebyshev(Mean, Sd) UCL	13.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.4	Mean	50.11
Maximum	67.5	Median	44
SD	11.6	Std. Error of Mean	3.866
Coefficient of Variation	0.231	Skewness	0.843
Mean of logged Data	3.892	SD of logged Data	0.219

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.3	95% Adjusted-CLT UCL (Chen-1995)	57.63
		95% Modified-t UCL (Johnson-1978)	57.48

Nonparametric Distribution Free UCLs

95% CLT UCL	56.47	95% Jackknife UCL	57.3
95% Standard Bootstrap UCL	56.04	95% Bootstrap-t UCL	58.75
95% Hall's Bootstrap UCL	54.14	95% Percentile Bootstrap UCL	56.11
95% BCA Bootstrap UCL	56.27		
90% Chebyshev(Mean, Sd) UCL	61.71	95% Chebyshev(Mean, Sd) UCL	66.96
97.5% Chebyshev(Mean, Sd) UCL	74.25	99% Chebyshev(Mean, Sd) UCL	88.58

Suggested UCL to Use

95% Student's-t UCL	57.3	or 95% Modified-t UCL	57.48

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.31	Mean	2.278
Maximum	3.6	Median	1.99
SD	0.706	Std. Error of Mean	0.235
Coefficient of Variation	0.31	Skewness	0.791
Mean of logged Data	0.782	SD of logged Data	0.303

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.715	95% Adjusted-CLT UCL (Chen-1995)	2.731
		95% Modified-t UCL (Johnson-1978)	2.726

Nonparametric Distribution Free UCLs

95% CLT UCL	2.665	95% Jackknife UCL	2.715
95% Standard Bootstrap UCL	2.64	95% Bootstrap-t UCL	2.819
95% Hall's Bootstrap UCL	2.796	95% Percentile Bootstrap UCL	2.654
95% BCA Bootstrap UCL	2.702		
90% Chebyshev(Mean, Sd) UCL	2.984	95% Chebyshev(Mean, Sd) UCL	3.303
97.5% Chebyshev(Mean, Sd) UCL	3.747	99% Chebyshev(Mean, Sd) UCL	4.618

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.51	Mean	0.521
Maximum	0.53	Median	0.525
SD	0.00894	Std. Error of Mean	0.00298
Coefficient of Variation	0.0171	Skewness	-0.426
Mean of logged Data	-0.652	SD of logged Data	0.0172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.527	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.527

Nonparametric Distribution Free UCLs

95% CLT UCL	0.526	95% Jackknife UCL	0.527
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.53	95% Chebyshev(Mean, Sd) UCL	0.534
97.5% Chebyshev(Mean, Sd) UCL	0.54	99% Chebyshev(Mean, Sd) UCL	0.551

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.065	Mean	3.182
Maximum	11.7	Median	2.135
SD	3.194	Std. Error of Mean	1.065
Coefficient of Variation	1.004	Skewness	2.999
Mean of logged Data	0.94	SD of logged Data	0.57

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.162	95% Adjusted-CLT UCL (Chen-1995)	6.071
		95% Modified-t UCL (Johnson-1978)	5.34

Nonparametric Distribution Free UCLs

95% CLT UCL	4.934	95% Jackknife UCL	5.162
95% Standard Bootstrap UCL	4.803	95% Bootstrap-t UCL	120.3
95% Hall's Bootstrap UCL	66.49	95% Percentile Bootstrap UCL	5.304
95% BCA Bootstrap UCL	6.373		
90% Chebyshev(Mean, Sd) UCL	6.377	95% Chebyshev(Mean, Sd) UCL	7.824
97.5% Chebyshev(Mean, Sd) UCL	9.832	99% Chebyshev(Mean, Sd) UCL	13.78

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.824

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.065	Mean	9.591
Maximum	60.6	Median	2.155
SD	19.26	Std. Error of Mean	6.421
Coefficient of Variation	2.008	Skewness	2.924
Mean of logged Data	1.355	SD of logged Data	1.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.53	95% Adjusted-CLT UCL (Chen-1995)	26.84
		95% Modified-t UCL (Johnson-1978)	22.57

Nonparametric Distribution Free UCLs

95% CLT UCL	20.15	95% Jackknife UCL	21.53
95% Standard Bootstrap UCL	19.56	95% Bootstrap-t UCL	235.9
95% Hall's Bootstrap UCL	239.4	95% Percentile Bootstrap UCL	21.82
95% BCA Bootstrap UCL	28.73		
90% Chebyshev(Mean, Sd) UCL	28.85	95% Chebyshev(Mean, Sd) UCL	37.58
97.5% Chebyshev(Mean, Sd) UCL	49.69	99% Chebyshev(Mean, Sd) UCL	73.48

Suggested UCL to Use

95% Hall's Bootstrap UCL	239.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.065	Mean	9.566
Maximum	57.1	Median	2.155
SD	18.07	Std. Error of Mean	6.024
Coefficient of Variation	1.889	Skewness	2.856
Mean of logged Data	1.402	SD of logged Data	1.15

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.77	95% Adjusted-CLT UCL (Chen-1995)	25.6
		95% Modified-t UCL (Johnson-1978)	21.72

Nonparametric Distribution Free UCLs

95% CLT UCL	19.47	95% Jackknife UCL	20.77
95% Standard Bootstrap UCL	18.58	95% Bootstrap-t UCL	132.4
95% Hall's Bootstrap UCL	136.3	95% Percentile Bootstrap UCL	21.14
95% BCA Bootstrap UCL	27.53		
90% Chebyshev(Mean, Sd) UCL	27.64	95% Chebyshev(Mean, Sd) UCL	35.82
97.5% Chebyshev(Mean, Sd) UCL	47.18	99% Chebyshev(Mean, Sd) UCL	69.5

Suggested UCL to Use

95% Hall's Bootstrap UCL	136.3

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.18	Mean	14.18
Maximum	82.5	Median	3.32
SD	26.02	Std. Error of Mean	8.672
Coefficient of Variation	1.835	Skewness	2.839
Mean of logged Data	1.835	SD of logged Data	1.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.3	95% Adjusted-CLT UCL (Chen-1995)	37.21
		95% Modified-t UCL (Johnson-1978)	31.67

Nonparametric Distribution Free UCLs

95% CLT UCL	28.44	95% Jackknife UCL	30.3
95% Standard Bootstrap UCL	27.85	95% Bootstrap-t UCL	154.4
95% Hall's Bootstrap UCL	160	95% Percentile Bootstrap UCL	30.31
95% BCA Bootstrap UCL	39.93		
90% Chebyshev(Mean, Sd) UCL	40.19	95% Chebyshev(Mean, Sd) UCL	51.98
97.5% Chebyshev(Mean, Sd) UCL	68.33	99% Chebyshev(Mean, Sd) UCL	100.5

Suggested UCL to Use

95% Hall's Bootstrap UCL 160

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.18	Mean	8.559
Maximum	44.5	Median	3.32
SD	13.59	Std. Error of Mean	4.529
Coefficient of Variation	1.587	Skewness	2.914
Mean of logged Data	1.614	SD of logged Data	0.877

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.98	95% Adjusted-CLT UCL (Chen-1995)	20.71
		95% Modified-t UCL (Johnson-1978)	17.71

Nonparametric Distribution Free UCLs

95% CLT UCL	16.01	95% Jackknife UCL	16.98
95% Standard Bootstrap UCL	15.61	95% Bootstrap-t UCL	186.5
95% Hall's Bootstrap UCL	185.3	95% Percentile Bootstrap UCL	17.02
95% BCA Bootstrap UCL	21.62		
90% Chebyshev(Mean, Sd) UCL	22.15	95% Chebyshev(Mean, Sd) UCL	28.3
97.5% Chebyshev(Mean, Sd) UCL	36.84	99% Chebyshev(Mean, Sd) UCL	53.62

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 28.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.065	Mean	5.949
Maximum	31.1	Median	2.155
SD	9.546	Std. Error of Mean	3.182
Coefficient of Variation	1.605	Skewness	2.873

Mean of logged Data	1.219	SD of logged Data	0.914

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.87	95% Adjusted-CLT UCL (Chen-1995)	14.44
		95% Modified-t UCL (Johnson-1978)	12.37

Nonparametric Distribution Free UCLs

95% CLT UCL	11.18	95% Jackknife UCL	11.87
95% Standard Bootstrap UCL	10.92	95% Bootstrap-t UCL	115
95% Hall's Bootstrap UCL	115.7	95% Percentile Bootstrap UCL	11.89
95% BCA Bootstrap UCL	15.12		
90% Chebyshev(Mean, Sd) UCL	15.49	95% Chebyshev(Mean, Sd) UCL	19.82
97.5% Chebyshev(Mean, Sd) UCL	25.82	99% Chebyshev(Mean, Sd) UCL	37.61

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.82

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.065	Mean	11.22
Maximum	65.8	Median	2.155
SD	20.9	Std. Error of Mean	6.966
Coefficient of Variation	1.863	Skewness	2.785
Mean of logged Data	1.496	SD of logged Data	1.238

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.17	95% Adjusted-CLT UCL (Chen-1995)	29.58
		95% Modified-t UCL (Johnson-1978)	25.25

Nonparametric Distribution Free UCLs

95% CLT UCL	22.68	95% Jackknife UCL	24.17
95% Standard Bootstrap UCL	21.75	95% Bootstrap-t UCL	97.74
95% Hall's Bootstrap UCL	102.6	95% Percentile Bootstrap UCL	24.69
95% BCA Bootstrap UCL	31.1		
90% Chebyshev(Mean, Sd) UCL	32.11	95% Chebyshev(Mean, Sd) UCL	41.58
97.5% Chebyshev(Mean, Sd) UCL	54.72	99% Chebyshev(Mean, Sd) UCL	80.52

Suggested UCL to Use

95% Hall's Bootstrap UCL 102.6

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.18	Mean	3.884
Maximum	8.88	Median	3.285
SD	1.874	Std. Error of Mean	0.625
Coefficient of Variation	0.483	Skewness	2.995
Mean of logged Data	1.293	SD of logged Data	0.335

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.046	95% Adjusted-CLT UCL (Chen-1995)	5.578
		95% Modified-t UCL (Johnson-1978)	5.15

Nonparametric Distribution Free UCLs

95% CLT UCL	4.912	95% Jackknife UCL	5.046
95% Standard Bootstrap UCL	4.851	95% Bootstrap-t UCL	28.79
95% Hall's Bootstrap UCL	20.39	95% Percentile Bootstrap UCL	5.124
95% BCA Bootstrap UCL	5.171		
90% Chebyshev(Mean, Sd) UCL	5.758	95% Chebyshev(Mean, Sd) UCL	6.607
97.5% Chebyshev(Mean, Sd) UCL	7.786	99% Chebyshev(Mean, Sd) UCL	10.1

Suggested UCL to Use

95% Student's-t UCL 5.046 or 95% Modified-t UCL 5.15

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	17.48
Maximum	119	Median	2.155
SD	38.35	Std. Error of Mean	12.78
Coefficient of Variation	2.194	Skewness	2.918

Mean of logged Data	1.6	SD of logged Data	1.422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.25	95% Adjusted-CLT UCL (Chen-1995)	51.79
		95% Modified-t UCL (Johnson-1978)	43.32

Nonparametric Distribution Free UCLs

95% CLT UCL	38.51	95% Jackknife UCL	41.25
95% Standard Bootstrap UCL	37.39	95% Bootstrap-t UCL	193
95% Hall's Bootstrap UCL	196.5	95% Percentile Bootstrap UCL	42.14
95% BCA Bootstrap UCL	54.08		
90% Chebyshev(Mean, Sd) UCL	55.83	95% Chebyshev(Mean, Sd) UCL	73.2
97.5% Chebyshev(Mean, Sd) UCL	97.31	99% Chebyshev(Mean, Sd) UCL	144.7

Suggested UCL to Use

95% Hall's Bootstrap UCL	196.5

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.02	Mean	1.272
Maximum	1.33	Median	1.305
SD	0.0969	Std. Error of Mean	0.0323
Coefficient of Variation	0.0762	Skewness	-2.716
Mean of logged Data	0.237	SD of logged Data	0.0833

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.332	95% Adjusted-CLT UCL (Chen-1995)	1.294
		95% Modified-t UCL (Johnson-1978)	1.327

Nonparametric Distribution Free UCLs

95% CLT UCL	1.325	95% Jackknife UCL	1.332
95% Standard Bootstrap UCL	1.321	95% Bootstrap-t UCL	1.31
95% Hall's Bootstrap UCL	1.303	95% Percentile Bootstrap UCL	1.311

95% BCA Bootstrap UCL	1.307		
90% Chebyshev(Mean, Sd) UCL	1.369	95% Chebyshev(Mean, Sd) UCL	1.412
97.5% Chebyshev(Mean, Sd) UCL	1.473	99% Chebyshev(Mean, Sd) UCL	1.593

Suggested UCL to Use

95% Student's-t UCL	1.332	or 95% Modified-t UCL	1.327

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.18	Mean	9.554
Maximum	51.3	Median	3.32
SD	15.82	Std. Error of Mean	5.272
Coefficient of Variation	1.655	Skewness	2.891
Mean of logged Data	1.662	SD of logged Data	0.934

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.36	95% Adjusted-CLT UCL (Chen-1995)	23.65
		95% Modified-t UCL (Johnson-1978)	20.2

Nonparametric Distribution Free UCLs

95% CLT UCL	18.23	95% Jackknife UCL	19.36
95% Standard Bootstrap UCL	17.69	95% Bootstrap-t UCL	176.9
95% Hall's Bootstrap UCL	178.1	95% Percentile Bootstrap UCL	19.31
95% BCA Bootstrap UCL	24.63		
90% Chebyshev(Mean, Sd) UCL	25.37	95% Chebyshev(Mean, Sd) UCL	32.53
97.5% Chebyshev(Mean, Sd) UCL	42.48	99% Chebyshev(Mean, Sd) UCL	62.01

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	32.53

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	1.44	Mean	3.434
Maximum	7.29	Median	2.54
SD	2.133	Std. Error of Mean	0.711
Coefficient of Variation	0.621	Skewness	0.941
Mean of logged Data	1.072	SD of logged Data	0.593

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.756	95% Adjusted-CLT UCL (Chen-1995)	4.842
		95% Modified-t UCL (Johnson-1978)	4.794

Nonparametric Distribution Free UCLs

95% CLT UCL	4.604	95% Jackknife UCL	4.756
95% Standard Bootstrap UCL	4.557	95% Bootstrap-t UCL	5.313
95% Hall's Bootstrap UCL	4.535	95% Percentile Bootstrap UCL	4.58
95% BCA Bootstrap UCL	4.743		
90% Chebyshev(Mean, Sd) UCL	5.567	95% Chebyshev(Mean, Sd) UCL	6.533
97.5% Chebyshev(Mean, Sd) UCL	7.874	99% Chebyshev(Mean, Sd) UCL	10.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.18	Mean	9.64
Maximum	56.6	Median	3.32
SD	17.63	Std. Error of Mean	5.878
Coefficient of Variation	1.829	Skewness	2.985
Mean of logged Data	1.607	SD of logged Data	0.935

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.57	95% Adjusted-CLT UCL (Chen-1995)	25.56
		95% Modified-t UCL (Johnson-1978)	21.54

Nonparametric Distribution Free UCLs

95% CLT UCL	19.31	95% Jackknife UCL	20.57
95% Standard Bootstrap UCL	18.76	95% Bootstrap-t UCL	220.5

95% Hall's Bootstrap UCL	216.3	95% Percentile Bootstrap UCL	21.22
95% BCA Bootstrap UCL	27.13		
90% Chebyshev(Mean, Sd) UCL	27.27	95% Chebyshev(Mean, Sd) UCL	35.26
97.5% Chebyshev(Mean, Sd) UCL	46.35	99% Chebyshev(Mean, Sd) UCL	68.12

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	35.26

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.25	Mean	15.43
Maximum	97.4	Median	3.3
SD	30.96	Std. Error of Mean	10.32
Coefficient of Variation	2.007	Skewness	2.919
Mean of logged Data	1.795	SD of logged Data	1.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.62	95% Adjusted-CLT UCL (Chen-1995)	43.14
		95% Modified-t UCL (Johnson-1978)	36.3

Nonparametric Distribution Free UCLs

95% CLT UCL	32.41	95% Jackknife UCL	34.62
95% Standard Bootstrap UCL	31.44	95% Bootstrap-t UCL	171.1
95% Hall's Bootstrap UCL	166.4	95% Percentile Bootstrap UCL	35.26
95% BCA Bootstrap UCL	46.33		
90% Chebyshev(Mean, Sd) UCL	46.4	95% Chebyshev(Mean, Sd) UCL	60.42
97.5% Chebyshev(Mean, Sd) UCL	79.89	99% Chebyshev(Mean, Sd) UCL	118.1

Suggested UCL to Use

95% Hall's Bootstrap UCL	166.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:48:32 AM
From File	04589_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.9	Mean	16.64
Maximum	20.4	Median	16.3
SD	2.687	Std. Error of Mean	0.896
Coefficient of Variation	0.161	Skewness	-0.349
Mean of logged Data	2.8	SD of logged Data	0.169

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.31	95% Adjusted-CLT UCL (Chen-1995)	18.01
		95% Modified-t UCL (Johnson-1978)	18.29

Nonparametric Distribution Free UCLs

95% CLT UCL	18.12	95% Jackknife UCL	18.31
95% Standard Bootstrap UCL	18.04	95% Bootstrap-t UCL	18.29
95% Hall's Bootstrap UCL	18.03	95% Percentile Bootstrap UCL	18.03
95% BCA Bootstrap UCL	18		
90% Chebyshev(Mean, Sd) UCL	19.33	95% Chebyshev(Mean, Sd) UCL	20.55
97.5% Chebyshev(Mean, Sd) UCL	22.24	99% Chebyshev(Mean, Sd) UCL	25.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.2	Mean	11.24
Maximum	12.2	Median	11.3
SD	0.697	Std. Error of Mean	0.232
Coefficient of Variation	0.062	Skewness	0.0435

Mean of logged Data	2.418	SD of logged Data	0.062

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.68	95% Adjusted-CLT UCL (Chen-1995)	11.63
		95% Modified-t UCL (Johnson-1978)	11.68

Nonparametric Distribution Free UCLs

95% CLT UCL	11.63	95% Jackknife UCL	11.68
95% Standard Bootstrap UCL	11.6	95% Bootstrap-t UCL	11.7
95% Hall's Bootstrap UCL	11.61	95% Percentile Bootstrap UCL	11.61
95% BCA Bootstrap UCL	11.61		
90% Chebyshev(Mean, Sd) UCL	11.94	95% Chebyshev(Mean, Sd) UCL	12.26
97.5% Chebyshev(Mean, Sd) UCL	12.69	99% Chebyshev(Mean, Sd) UCL	13.55

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	43.3	Mean	55.01
Maximum	63.2	Median	57.5
SD	6.62	Std. Error of Mean	2.207
Coefficient of Variation	0.12	Skewness	-0.562
Mean of logged Data	4.001	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.11	95% Adjusted-CLT UCL (Chen-1995)	58.2
		95% Modified-t UCL (Johnson-1978)	59.05

Nonparametric Distribution Free UCLs

95% CLT UCL	58.64	95% Jackknife UCL	59.11
95% Standard Bootstrap UCL	58.36	95% Bootstrap-t UCL	58.72
95% Hall's Bootstrap UCL	58.03	95% Percentile Bootstrap UCL	58.28
95% BCA Bootstrap UCL	58.08		
90% Chebyshev(Mean, Sd) UCL	61.63	95% Chebyshev(Mean, Sd) UCL	64.63
97.5% Chebyshev(Mean, Sd) UCL	68.79	99% Chebyshev(Mean, Sd) UCL	76.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.49	Mean	1.85
Maximum	1.98	Median	1.93
SD	0.173	Std. Error of Mean	0.0578
Coefficient of Variation	0.0937	Skewness	-1.626
Mean of logged Data	0.611	SD of logged Data	0.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.957	95% Adjusted-CLT UCL (Chen-1995)	1.912
		95% Modified-t UCL (Johnson-1978)	1.952

Nonparametric Distribution Free UCLs

95% CLT UCL	1.945	95% Jackknife UCL	1.957
95% Standard Bootstrap UCL	1.938	95% Bootstrap-t UCL	1.93
95% Hall's Bootstrap UCL	1.915	95% Percentile Bootstrap UCL	1.938
95% BCA Bootstrap UCL	1.923		
90% Chebyshev(Mean, Sd) UCL	2.023	95% Chebyshev(Mean, Sd) UCL	2.102
97.5% Chebyshev(Mean, Sd) UCL	2.211	99% Chebyshev(Mean, Sd) UCL	2.425

Suggested UCL to Use

95% Student's-t UCL	1.957	or 95% Modified-t UCL	1.952

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.498	Mean	0.515
Maximum	0.53	Median	0.52

SD	0.0118	Std. Error of Mean	0.00392
Coefficient of Variation	0.0228	Skewness	-0.498
Mean of logged Data	-0.663	SD of logged Data	0.0229

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.523	95% Adjusted-CLT UCL (Chen-1995)	0.521
		95% Modified-t UCL (Johnson-1978)	0.522

Nonparametric Distribution Free UCLs

95% CLT UCL	0.522	95% Jackknife UCL	0.523
95% Standard Bootstrap UCL	0.521	95% Bootstrap-t UCL	0.522
95% Hall's Bootstrap UCL	0.521	95% Percentile Bootstrap UCL	0.521
95% BCA Bootstrap UCL	0.521		
90% Chebyshev(Mean, Sd) UCL	0.527	95% Chebyshev(Mean, Sd) UCL	0.532
97.5% Chebyshev(Mean, Sd) UCL	0.54	99% Chebyshev(Mean, Sd) UCL	0.554

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.48	Mean	2.03
Maximum	2.145	Median	2.105
SD	0.209	Std. Error of Mean	0.0698
Coefficient of Variation	0.103	Skewness	-2.829
Mean of logged Data	0.702	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.16	95% Adjusted-CLT UCL (Chen-1995)	2.075
		95% Modified-t UCL (Johnson-1978)	2.149

Nonparametric Distribution Free UCLs

95% CLT UCL	2.145	95% Jackknife UCL	2.16
95% Standard Bootstrap UCL	2.141	95% Bootstrap-t UCL	2.114

95% Hall's Bootstrap UCL	2.099	95% Percentile Bootstrap UCL	2.113
95% BCA Bootstrap UCL	2.104		
90% Chebyshev(Mean, Sd) UCL	2.239	95% Chebyshev(Mean, Sd) UCL	2.334
97.5% Chebyshev(Mean, Sd) UCL	2.466	99% Chebyshev(Mean, Sd) UCL	2.725

Suggested UCL to Use

95% Student's-t UCL	2.16	or 95% Modified-t UCL	2.149

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	2.583
Maximum	4.41	Median	2.125
SD	0.821	Std. Error of Mean	0.274
Coefficient of Variation	0.318	Skewness	1.672
Mean of logged Data	0.912	SD of logged Data	0.277

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.092	95% Adjusted-CLT UCL (Chen-1995)	3.196
		95% Modified-t UCL (Johnson-1978)	3.117

Nonparametric Distribution Free UCLs

95% CLT UCL	3.033	95% Jackknife UCL	3.092
95% Standard Bootstrap UCL	3.021	95% Bootstrap-t UCL	3.581
95% Hall's Bootstrap UCL	3.078	95% Percentile Bootstrap UCL	3.063
95% BCA Bootstrap UCL	3.187		
90% Chebyshev(Mean, Sd) UCL	3.404	95% Chebyshev(Mean, Sd) UCL	3.775
97.5% Chebyshev(Mean, Sd) UCL	4.291	99% Chebyshev(Mean, Sd) UCL	5.305

Suggested UCL to Use

95% Student's-t UCL	3.092	or 95% Modified-t UCL	3.117

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.44	Mean	2.024
Maximum	2.145	Median	2.105
SD	0.223	Std. Error of Mean	0.0742
Coefficient of Variation	0.11	Skewness	-2.82
Mean of logged Data	0.699	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.162	95% Adjusted-CLT UCL (Chen-1995)	2.071
		95% Modified-t UCL (Johnson-1978)	2.15

Nonparametric Distribution Free UCLs

95% CLT UCL	2.146	95% Jackknife UCL	2.162
95% Standard Bootstrap UCL	2.139	95% Bootstrap-t UCL	2.116
95% Hall's Bootstrap UCL	2.095	95% Percentile Bootstrap UCL	2.111
95% BCA Bootstrap UCL	2.102		
90% Chebyshev(Mean, Sd) UCL	2.246	95% Chebyshev(Mean, Sd) UCL	2.347
97.5% Chebyshev(Mean, Sd) UCL	2.487	99% Chebyshev(Mean, Sd) UCL	2.762

Suggested UCL to Use

95% Student's-t UCL	2.162	or 95% Modified-t UCL	2.15

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.97	Mean	4.984
Maximum	9.27	Median	3.27
SD	2.723	Std. Error of Mean	0.908
Coefficient of Variation	0.546	Skewness	0.966
Mean of logged Data	1.489	SD of logged Data	0.494

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	6.672	95% Adjusted-CLT UCL (Chen-1995)	6.79
		95% Modified-t UCL (Johnson-1978)	6.721

Nonparametric Distribution Free UCLs

95% CLT UCL	6.477	95% Jackknife UCL	6.672
95% Standard Bootstrap UCL	6.374	95% Bootstrap-t UCL	7.483
95% Hall's Bootstrap UCL	5.996	95% Percentile Bootstrap UCL	6.372
95% BCA Bootstrap UCL	6.632		
90% Chebyshev(Mean, Sd) UCL	7.707	95% Chebyshev(Mean, Sd) UCL	8.94
97.5% Chebyshev(Mean, Sd) UCL	10.65	99% Chebyshev(Mean, Sd) UCL	14.01

Suggested UCL to Use

95% Student's-t UCL	6.672	or 95% Modified-t UCL	6.721

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.135	Mean	3.434
Maximum	4.14	Median	3.27
SD	0.339	Std. Error of Mean	0.113
Coefficient of Variation	0.0988	Skewness	1.334
Mean of logged Data	1.23	SD of logged Data	0.0945

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.644	95% Adjusted-CLT UCL (Chen-1995)	3.674
		95% Modified-t UCL (Johnson-1978)	3.653

Nonparametric Distribution Free UCLs

95% CLT UCL	3.62	95% Jackknife UCL	3.644
95% Standard Bootstrap UCL	3.611	95% Bootstrap-t UCL	3.768
95% Hall's Bootstrap UCL	3.626	95% Percentile Bootstrap UCL	3.608
95% BCA Bootstrap UCL	3.668		
90% Chebyshev(Mean, Sd) UCL	3.773	95% Chebyshev(Mean, Sd) UCL	3.927
97.5% Chebyshev(Mean, Sd) UCL	4.14	99% Chebyshev(Mean, Sd) UCL	4.559

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	2.436
Maximum	3.37	Median	2.125
SD	0.539	Std. Error of Mean	0.18
Coefficient of Variation	0.221	Skewness	1.162
Mean of logged Data	0.871	SD of logged Data	0.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.77	95% Adjusted-CLT UCL (Chen-1995)	2.806
		95% Modified-t UCL (Johnson-1978)	2.782

Nonparametric Distribution Free UCLs

95% CLT UCL	2.732	95% Jackknife UCL	2.77
95% Standard Bootstrap UCL	2.716	95% Bootstrap-t UCL	3.098
95% Hall's Bootstrap UCL	2.699	95% Percentile Bootstrap UCL	2.724
95% BCA Bootstrap UCL	2.789		
90% Chebyshev(Mean, Sd) UCL	2.975	95% Chebyshev(Mean, Sd) UCL	3.219
97.5% Chebyshev(Mean, Sd) UCL	3.558	99% Chebyshev(Mean, Sd) UCL	4.224

Suggested UCL to Use

95% Student's-t UCL	2.77	or 95% Modified-t UCL	2.782

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	4.319
Maximum	9.16	Median	2.38
SD	3.149	Std. Error of Mean	1.05
Coefficient of Variation	0.729	Skewness	0.956
Mean of logged Data	1.249	SD of logged Data	0.666

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.271	95% Adjusted-CLT UCL (Chen-1995)	6.403
		95% Modified-t UCL (Johnson-1978)	6.327

Nonparametric Distribution Free UCLs

95% CLT UCL	6.046	95% Jackknife UCL	6.271
95% Standard Bootstrap UCL	5.931	95% Bootstrap-t UCL	7.198
95% Hall's Bootstrap UCL	5.455	95% Percentile Bootstrap UCL	5.889
95% BCA Bootstrap UCL	6.162		
90% Chebyshev(Mean, Sd) UCL	7.468	95% Chebyshev(Mean, Sd) UCL	8.895
97.5% Chebyshev(Mean, Sd) UCL	10.87	99% Chebyshev(Mean, Sd) UCL	14.76

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.895

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	3.218
Maximum	3.305	Median	3.245
SD	0.0696	Std. Error of Mean	0.0232
Coefficient of Variation	0.0216	Skewness	-0.482
Mean of logged Data	1.169	SD of logged Data	0.0217

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.262	95% Adjusted-CLT UCL (Chen-1995)	3.253
		95% Modified-t UCL (Johnson-1978)	3.261

Nonparametric Distribution Free UCLs

95% CLT UCL	3.257	95% Jackknife UCL	3.262
95% Standard Bootstrap UCL	3.254	95% Bootstrap-t UCL	3.257
95% Hall's Bootstrap UCL	3.25	95% Percentile Bootstrap UCL	3.253
95% BCA Bootstrap UCL	3.252		
90% Chebyshev(Mean, Sd) UCL	3.288	95% Chebyshev(Mean, Sd) UCL	3.32
97.5% Chebyshev(Mean, Sd) UCL	3.363	99% Chebyshev(Mean, Sd) UCL	3.449

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.05	Mean	5.218
Maximum	11.4	Median	2.18
SD	4.587	Std. Error of Mean	1.529
Coefficient of Variation	0.879	Skewness	0.856
Mean of logged Data	1.322	SD of logged Data	0.83

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.062	95% Adjusted-CLT UCL (Chen-1995)	8.2
		95% Modified-t UCL (Johnson-1978)	8.135

Nonparametric Distribution Free UCLs

95% CLT UCL	7.734	95% Jackknife UCL	8.062
95% Standard Bootstrap UCL	7.565	95% Bootstrap-t UCL	8.311
95% Hall's Bootstrap UCL	6.641	95% Percentile Bootstrap UCL	7.303
95% BCA Bootstrap UCL	8.267		
90% Chebyshev(Mean, Sd) UCL	9.806	95% Chebyshev(Mean, Sd) UCL	11.88
97.5% Chebyshev(Mean, Sd) UCL	14.77	99% Chebyshev(Mean, Sd) UCL	20.43

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 11.88

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.945	Mean	1.254
Maximum	1.32	Median	1.295
SD	0.118	Std. Error of Mean	0.0393
Coefficient of Variation	0.0941	Skewness	-2.795
Mean of logged Data	0.222	SD of logged Data	0.106

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.327	95% Adjusted-CLT UCL (Chen-1995)	1.279
		95% Modified-t UCL (Johnson-1978)	1.321

Nonparametric Distribution Free UCLs

95% CLT UCL	1.319	95% Jackknife UCL	1.327
95% Standard Bootstrap UCL	1.315	95% Bootstrap-t UCL	1.304
95% Hall's Bootstrap UCL	1.292	95% Percentile Bootstrap UCL	1.3
95% BCA Bootstrap UCL	1.296		
90% Chebyshev(Mean, Sd) UCL	1.372	95% Chebyshev(Mean, Sd) UCL	1.425
97.5% Chebyshev(Mean, Sd) UCL	1.5	99% Chebyshev(Mean, Sd) UCL	1.645

Suggested UCL to Use

95% Student's-t UCL	1.327	or 95% Modified-t UCL	1.321

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.135	Mean	3.485
Maximum	4.33	Median	3.27
SD	0.422	Std. Error of Mean	0.141
Coefficient of Variation	0.121	Skewness	1.314
Mean of logged Data	1.242	SD of logged Data	0.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.746	95% Adjusted-CLT UCL (Chen-1995)	3.782
		95% Modified-t UCL (Johnson-1978)	3.757

Nonparametric Distribution Free UCLs

95% CLT UCL	3.716	95% Jackknife UCL	3.746
95% Standard Bootstrap UCL	3.705	95% Bootstrap-t UCL	4.002
95% Hall's Bootstrap UCL	3.762	95% Percentile Bootstrap UCL	3.722
95% BCA Bootstrap UCL	3.75		
90% Chebyshev(Mean, Sd) UCL	3.907	95% Chebyshev(Mean, Sd) UCL	4.097
97.5% Chebyshev(Mean, Sd) UCL	4.363	99% Chebyshev(Mean, Sd) UCL	4.883

Suggested UCL to Use

95% Student's-t UCL	3.746	or 95% Modified-t UCL	3.757

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.84	Mean	2.741
Maximum	4.13	Median	2.38
SD	0.8	Std. Error of Mean	0.267
Coefficient of Variation	0.292	Skewness	0.65
Mean of logged Data	0.972	SD of logged Data	0.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.237	95% Adjusted-CLT UCL (Chen-1995)	3.242
		95% Modified-t UCL (Johnson-1978)	3.247

Nonparametric Distribution Free UCLs

95% CLT UCL	3.18	95% Jackknife UCL	3.237
95% Standard Bootstrap UCL	3.152	95% Bootstrap-t UCL	3.347
95% Hall's Bootstrap UCL	3.171	95% Percentile Bootstrap UCL	3.19
95% BCA Bootstrap UCL	3.219		
90% Chebyshev(Mean, Sd) UCL	3.541	95% Chebyshev(Mean, Sd) UCL	3.904
97.5% Chebyshev(Mean, Sd) UCL	4.407	99% Chebyshev(Mean, Sd) UCL	5.395

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.135	Mean	4.056
Maximum	6.01	Median	3.27
SD	1.263	Std. Error of Mean	0.421
Coefficient of Variation	0.311	Skewness	0.953
Mean of logged Data	1.361	SD of logged Data	0.288

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.839	95% Adjusted-CLT UCL (Chen-1995)	4.891
		95% Modified-t UCL (Johnson-1978)	4.861

Nonparametric Distribution Free UCLs

95% CLT UCL	4.748	95% Jackknife UCL	4.839
95% Standard Bootstrap UCL	4.702	95% Bootstrap-t UCL	5.194
95% Hall's Bootstrap UCL	4.496	95% Percentile Bootstrap UCL	4.686
95% BCA Bootstrap UCL	4.758		
90% Chebyshev(Mean, Sd) UCL	5.319	95% Chebyshev(Mean, Sd) UCL	5.89
97.5% Chebyshev(Mean, Sd) UCL	6.684	99% Chebyshev(Mean, Sd) UCL	8.243

Suggested UCL to Use

95% Student's-t UCL	4.839	or 95% Modified-t UCL	4.861

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.25	Mean	4.972
Maximum	9.05	Median	3.27
SD	2.89	Std. Error of Mean	0.963
Coefficient of Variation	0.581	Skewness	0.819
Mean of logged Data	1.465	SD of logged Data	0.545

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.764	95% Adjusted-CLT UCL (Chen-1995)	6.838
		95% Modified-t UCL (Johnson-1978)	6.808

Nonparametric Distribution Free UCLs

95% CLT UCL	6.557	95% Jackknife UCL	6.764
95% Standard Bootstrap UCL	6.445	95% Bootstrap-t UCL	7.012
95% Hall's Bootstrap UCL	5.948	95% Percentile Bootstrap UCL	6.369
95% BCA Bootstrap UCL	6.707		
90% Chebyshev(Mean, Sd) UCL	7.863	95% Chebyshev(Mean, Sd) UCL	9.172
97.5% Chebyshev(Mean, Sd) UCL	10.99	99% Chebyshev(Mean, Sd) UCL	14.56

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.172

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:49:49 AM
From File	04663A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	13.1	Mean	15.02
Maximum	22	Median	14.1
SD	2.819	Std. Error of Mean	0.94
Coefficient of Variation	0.188	Skewness	2.295
Mean of logged Data	2.696	SD of logged Data	0.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.77	95% Adjusted-CLT UCL (Chen-1995)	17.34
		95% Modified-t UCL (Johnson-1978)	16.89

Nonparametric Distribution Free UCLs

95% CLT UCL	16.57	95% Jackknife UCL	16.77
95% Standard Bootstrap UCL	16.49	95% Bootstrap-t UCL	20.06
95% Hall's Bootstrap UCL	23.66	95% Percentile Bootstrap UCL	16.69
95% BCA Bootstrap UCL	17.63		
90% Chebyshev(Mean, Sd) UCL	17.84	95% Chebyshev(Mean, Sd) UCL	19.12
97.5% Chebyshev(Mean, Sd) UCL	20.89	99% Chebyshev(Mean, Sd) UCL	24.37

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.4	Mean	37.81
Maximum	112	Median	27.9
SD	33.37	Std. Error of Mean	11.12
Coefficient of Variation	0.883	Skewness	1.787
Mean of logged Data	3.365	SD of logged Data	0.733

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.5	95% Adjusted-CLT UCL (Chen-1995)	63.19
		95% Modified-t UCL (Johnson-1978)	59.6

Nonparametric Distribution Free UCLs

95% CLT UCL	56.11	95% Jackknife UCL	58.5
95% Standard Bootstrap UCL	55.18	95% Bootstrap-t UCL	116.8
95% Hall's Bootstrap UCL	179.1	95% Percentile Bootstrap UCL	57.42
95% BCA Bootstrap UCL	61.91		
90% Chebyshev(Mean, Sd) UCL	71.18	95% Chebyshev(Mean, Sd) UCL	86.3
97.5% Chebyshev(Mean, Sd) UCL	107.3	99% Chebyshev(Mean, Sd) UCL	148.5

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.7	Mean	67.9
Maximum	121	Median	58.4
SD	23.36	Std. Error of Mean	7.787
Coefficient of Variation	0.344	Skewness	1.612
Mean of logged Data	4.173	SD of logged Data	0.306

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	82.38	95% Adjusted-CLT UCL (Chen-1995)	85.18
		95% Modified-t UCL (Johnson-1978)	83.08

Nonparametric Distribution Free UCLs

95% CLT UCL	80.71	95% Jackknife UCL	82.38
95% Standard Bootstrap UCL	80.16	95% Bootstrap-t UCL	90.6
95% Hall's Bootstrap UCL	122.9	95% Percentile Bootstrap UCL	80.61
95% BCA Bootstrap UCL	84.22		
90% Chebyshev(Mean, Sd) UCL	91.26	95% Chebyshev(Mean, Sd) UCL	101.8
97.5% Chebyshev(Mean, Sd) UCL	116.5	99% Chebyshev(Mean, Sd) UCL	145.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.917	Mean	2.45
Maximum	11	Median	1.18
SD	3.238	Std. Error of Mean	1.079
Coefficient of Variation	1.322	Skewness	2.889
Mean of logged Data	0.508	SD of logged Data	0.777

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.457	95% Adjusted-CLT UCL (Chen-1995)	5.336
		95% Modified-t UCL (Johnson-1978)	4.631

Nonparametric Distribution Free UCLs

95% CLT UCL	4.226	95% Jackknife UCL	4.457
95% Standard Bootstrap UCL	4.12	95% Bootstrap-t UCL	11.95
95% Hall's Bootstrap UCL	12.01	95% Percentile Bootstrap UCL	4.549
95% BCA Bootstrap UCL	5.658		
90% Chebyshev(Mean, Sd) UCL	5.688	95% Chebyshev(Mean, Sd) UCL	7.155
97.5% Chebyshev(Mean, Sd) UCL	9.191	99% Chebyshev(Mean, Sd) UCL	13.19

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.155

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.489	Mean	7.168
Maximum	51.5	Median	1.91
SD	16.65	Std. Error of Mean	5.55
Coefficient of Variation	2.323	Skewness	2.983
Mean of logged Data	0.67	SD of logged Data	1.428

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.49	95% Adjusted-CLT UCL (Chen-1995)	22.19
		95% Modified-t UCL (Johnson-1978)	18.41

Nonparametric Distribution Free UCLs

95% CLT UCL	16.3	95% Jackknife UCL	17.49
95% Standard Bootstrap UCL	15.54	95% Bootstrap-t UCL	126.9
95% Hall's Bootstrap UCL	100.5	95% Percentile Bootstrap UCL	18.15
95% BCA Bootstrap UCL	23.66		
90% Chebyshev(Mean, Sd) UCL	23.82	95% Chebyshev(Mean, Sd) UCL	31.36
97.5% Chebyshev(Mean, Sd) UCL	41.83	99% Chebyshev(Mean, Sd) UCL	62.39

Suggested UCL to Use

95% Hall's Bootstrap UCL 100.5

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	13.38
Maximum	88.3	Median	4.51
SD	28.15	Std. Error of Mean	9.382
Coefficient of Variation	2.104	Skewness	2.98
Mean of logged Data	1.651	SD of logged Data	1.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.82	95% Adjusted-CLT UCL (Chen-1995)	38.77
		95% Modified-t UCL (Johnson-1978)	32.37

Nonparametric Distribution Free UCLs

95% CLT UCL	28.81	95% Jackknife UCL	30.82
95% Standard Bootstrap UCL	27.77	95% Bootstrap-t UCL	203.4
95% Hall's Bootstrap UCL	135.5	95% Percentile Bootstrap UCL	31.92
95% BCA Bootstrap UCL	41.18		
90% Chebyshev(Mean, Sd) UCL	41.52	95% Chebyshev(Mean, Sd) UCL	54.27
97.5% Chebyshev(Mean, Sd) UCL	71.97	99% Chebyshev(Mean, Sd) UCL	106.7

Suggested UCL to Use

95% Hall's Bootstrap UCL 135.5

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.74	Mean	97.26
Maximum	628	Median	42.2
SD	199.9	Std. Error of Mean	66.65
Coefficient of Variation	2.056	Skewness	2.947
Mean of logged Data	3.378	SD of logged Data	1.631

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	221.2	95% Adjusted-CLT UCL (Chen-1995)	276.8
		95% Modified-t UCL (Johnson-1978)	232.1

Nonparametric Distribution Free UCLs

95% CLT UCL	206.9	95% Jackknife UCL	221.2
95% Standard Bootstrap UCL	199	95% Bootstrap-t UCL	946.1
95% Hall's Bootstrap UCL	969.1	95% Percentile Bootstrap UCL	228.1
95% BCA Bootstrap UCL	299.7		
90% Chebyshev(Mean, Sd) UCL	297.2	95% Chebyshev(Mean, Sd) UCL	387.8
97.5% Chebyshev(Mean, Sd) UCL	513.5	99% Chebyshev(Mean, Sd) UCL	760.4

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.47	Mean	127.2
Maximum	810	Median	51.5
SD	257.5	Std. Error of Mean	85.84
Coefficient of Variation	2.024	Skewness	2.934
Mean of logged Data	3.609	SD of logged Data	1.725

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	286.8	95% Adjusted-CLT UCL (Chen-1995)	358.1
		95% Modified-t UCL (Johnson-1978)	300.8

Nonparametric Distribution Free UCLs

95% CLT UCL	268.4	95% Jackknife UCL	286.8
95% Standard Bootstrap UCL	258.3	95% Bootstrap-t UCL	1149
95% Hall's Bootstrap UCL	1148	95% Percentile Bootstrap UCL	292.7
95% BCA Bootstrap UCL	313		
90% Chebyshev(Mean, Sd) UCL	384.7	95% Chebyshev(Mean, Sd) UCL	501.4
97.5% Chebyshev(Mean, Sd) UCL	663.3	99% Chebyshev(Mean, Sd) UCL	981.3

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.16	Mean	128.3
Maximum	788	Median	56.7
SD	249.1	Std. Error of Mean	83.03
Coefficient of Variation	1.942	Skewness	2.921
Mean of logged Data	3.716	SD of logged Data	1.658

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	282.7	95% Adjusted-CLT UCL (Chen-1995)	351.2
		95% Modified-t UCL (Johnson-1978)	296.2

Nonparametric Distribution Free UCLs

95% CLT UCL	264.9	95% Jackknife UCL	282.7
95% Standard Bootstrap UCL	255.6	95% Bootstrap-t UCL	995.7
95% Hall's Bootstrap UCL	1095	95% Percentile Bootstrap UCL	288.1
95% BCA Bootstrap UCL	377.9		
90% Chebyshev(Mean, Sd) UCL	377.4	95% Chebyshev(Mean, Sd) UCL	490.2
97.5% Chebyshev(Mean, Sd) UCL	646.8	99% Chebyshev(Mean, Sd) UCL	954.4

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.6	Mean	56.22
Maximum	317	Median	28
SD	98.88	Std. Error of Mean	32.96
Coefficient of Variation	1.759	Skewness	2.873
Mean of logged Data	3.117	SD of logged Data	1.436

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	117.5	95% Adjusted-CLT UCL (Chen-1995)	144.2
		95% Modified-t UCL (Johnson-1978)	122.8

Nonparametric Distribution Free UCLs

95% CLT UCL	110.4	95% Jackknife UCL	117.5
95% Standard Bootstrap UCL	107.5	95% Bootstrap-t UCL	336.5
95% Hall's Bootstrap UCL	384.6	95% Percentile Bootstrap UCL	120
95% BCA Bootstrap UCL	152.2		
90% Chebyshev(Mean, Sd) UCL	155.1	95% Chebyshev(Mean, Sd) UCL	199.9
97.5% Chebyshev(Mean, Sd) UCL	262.1	99% Chebyshev(Mean, Sd) UCL	384.2

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.145	Mean	48.27
Maximum	288	Median	20
SD	90.76	Std. Error of Mean	30.25
Coefficient of Variation	1.88	Skewness	2.891
Mean of logged Data	2.842	SD of logged Data	1.511

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	104.5	95% Adjusted-CLT UCL (Chen-1995)	129.2
		95% Modified-t UCL (Johnson-1978)	109.4

Nonparametric Distribution Free UCLs

95% CLT UCL	98.04	95% Jackknife UCL	104.5
95% Standard Bootstrap UCL	94.39	95% Bootstrap-t UCL	332.8
95% Hall's Bootstrap UCL	342.4	95% Percentile Bootstrap UCL	106.9
95% BCA Bootstrap UCL	135		
90% Chebyshev(Mean, Sd) UCL	139	95% Chebyshev(Mean, Sd) UCL	180.1
97.5% Chebyshev(Mean, Sd) UCL	237.2	99% Chebyshev(Mean, Sd) UCL	349.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.22	Mean	112.6
Maximum	728	Median	44.6
SD	231.9	Std. Error of Mean	77.31
Coefficient of Variation	2.061	Skewness	2.943
Mean of logged Data	3.517	SD of logged Data	1.627

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	256.3	95% Adjusted-CLT UCL (Chen-1995)	320.8
		95% Modified-t UCL (Johnson-1978)	269

Nonparametric Distribution Free UCLs

95% CLT UCL	239.7	95% Jackknife UCL	256.3
95% Standard Bootstrap UCL	229.8	95% Bootstrap-t UCL	1055
95% Hall's Bootstrap UCL	1046	95% Percentile Bootstrap UCL	264.6
95% BCA Bootstrap UCL	340.4		
90% Chebyshev(Mean, Sd) UCL	344.5	95% Chebyshev(Mean, Sd) UCL	449.5
97.5% Chebyshev(Mean, Sd) UCL	595.3	99% Chebyshev(Mean, Sd) UCL	881.8

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	18.82
Maximum	110	Median	8.13
SD	34.37	Std. Error of Mean	11.46
Coefficient of Variation	1.826	Skewness	2.941
Mean of logged Data	2.191	SD of logged Data	1.078

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.13	95% Adjusted-CLT UCL (Chen-1995)	49.67
		95% Modified-t UCL (Johnson-1978)	42

Nonparametric Distribution Free UCLs

95% CLT UCL	37.67	95% Jackknife UCL	40.13
95% Standard Bootstrap UCL	36.16	95% Bootstrap-t UCL	162.2
95% Hall's Bootstrap UCL	147.3	95% Percentile Bootstrap UCL	41.44
95% BCA Bootstrap UCL	52.91		
90% Chebyshev(Mean, Sd) UCL	53.19	95% Chebyshev(Mean, Sd) UCL	68.76
97.5% Chebyshev(Mean, Sd) UCL	90.36	99% Chebyshev(Mean, Sd) UCL	132.8

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.28	Mean	134.2
Maximum	882	Median	51.8
SD	281.6	Std. Error of Mean	93.88
Coefficient of Variation	2.098	Skewness	2.95
Mean of logged Data	3.596	SD of logged Data	1.756

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	308.8	95% Adjusted-CLT UCL (Chen-1995)	387.3
		95% Modified-t UCL (Johnson-1978)	324.2

Nonparametric Distribution Free UCLs

95% CLT UCL	288.6	95% Jackknife UCL	308.8
95% Standard Bootstrap UCL	277.6	95% Bootstrap-t UCL	1352
95% Hall's Bootstrap UCL	1310	95% Percentile Bootstrap UCL	320.3
95% BCA Bootstrap UCL	338.8		
90% Chebyshev(Mean, Sd) UCL	415.9	95% Chebyshev(Mean, Sd) UCL	543.4
97.5% Chebyshev(Mean, Sd) UCL	720.5	99% Chebyshev(Mean, Sd) UCL	1068

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.21	Mean	3.047
Maximum	17.1	Median	1.305
SD	5.27	Std. Error of Mean	1.757
Coefficient of Variation	1.73	Skewness	3
Mean of logged Data	0.541	SD of logged Data	0.862

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.313	95% Adjusted-CLT UCL (Chen-1995)	7.813
		95% Modified-t UCL (Johnson-1978)	6.606

Nonparametric Distribution Free UCLs

95% CLT UCL	5.936	95% Jackknife UCL	6.313
95% Standard Bootstrap UCL	5.704	95% Bootstrap-t UCL	430.1
95% Hall's Bootstrap UCL	357.1	95% Percentile Bootstrap UCL	6.553
95% BCA Bootstrap UCL	8.307		
90% Chebyshev(Mean, Sd) UCL	8.317	95% Chebyshev(Mean, Sd) UCL	10.7
97.5% Chebyshev(Mean, Sd) UCL	14.02	99% Chebyshev(Mean, Sd) UCL	20.53

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.69	Mean	77.67
Maximum	457	Median	36.3
SD	143.5	Std. Error of Mean	47.84
Coefficient of Variation	1.848	Skewness	2.897
Mean of logged Data	3.333	SD of logged Data	1.544

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	166.6	95% Adjusted-CLT UCL (Chen-1995)	205.7
		95% Modified-t UCL (Johnson-1978)	174.3

Nonparametric Distribution Free UCLs

95% CLT UCL	156.4	95% Jackknife UCL	166.6
95% Standard Bootstrap UCL	152.1	95% Bootstrap-t UCL	533.7
95% Hall's Bootstrap UCL	574.9	95% Percentile Bootstrap UCL	171.3
95% BCA Bootstrap UCL	217.3		
90% Chebyshev(Mean, Sd) UCL	221.2	95% Chebyshev(Mean, Sd) UCL	286.2
97.5% Chebyshev(Mean, Sd) UCL	376.4	99% Chebyshev(Mean, Sd) UCL	553.7

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.975	Mean	4.141
Maximum	22.5	Median	2.08
SD	6.904	Std. Error of Mean	2.301
Coefficient of Variation	1.667	Skewness	2.968
Mean of logged Data	0.846	SD of logged Data	0.915

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.42	95% Adjusted-CLT UCL (Chen-1995)	10.36
		95% Modified-t UCL (Johnson-1978)	8.799

Nonparametric Distribution Free UCLs

95% CLT UCL	7.926	95% Jackknife UCL	8.42
95% Standard Bootstrap UCL	7.619	95% Bootstrap-t UCL	41.87
95% Hall's Bootstrap UCL	51.37	95% Percentile Bootstrap UCL	8.656
95% BCA Bootstrap UCL	10.93		
90% Chebyshev(Mean, Sd) UCL	11.04	95% Chebyshev(Mean, Sd) UCL	14.17
97.5% Chebyshev(Mean, Sd) UCL	18.51	99% Chebyshev(Mean, Sd) UCL	27.04

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.17

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	60.75
Maximum	408	Median	20.3
SD	130.6	Std. Error of Mean	43.53
Coefficient of Variation	2.15	Skewness	2.966
Mean of logged Data	2.956	SD of logged Data	1.431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	141.7	95% Adjusted-CLT UCL (Chen-1995)	178.3
		95% Modified-t UCL (Johnson-1978)	148.9

Nonparametric Distribution Free UCLs

95% CLT UCL	132.4	95% Jackknife UCL	141.7
95% Standard Bootstrap UCL	126.1	95% Bootstrap-t UCL	757.6
95% Hall's Bootstrap UCL	660.4	95% Percentile Bootstrap UCL	146.7
95% BCA Bootstrap UCL	186.4		
90% Chebyshev(Mean, Sd) UCL	191.3	95% Chebyshev(Mean, Sd) UCL	250.5
97.5% Chebyshev(Mean, Sd) UCL	332.6	99% Chebyshev(Mean, Sd) UCL	493.9

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.36	Mean	155

Maximum	1050	Median	53.4
SD	336.8	Std. Error of Mean	112.3
Coefficient of Variation	2.173	Skewness	2.959
Mean of logged Data	3.65	SD of logged Data	1.803

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	363.8	95% Adjusted-CLT UCL (Chen-1995)	458
		95% Modified-t UCL (Johnson-1978)	382.2

Nonparametric Distribution Free UCLs

95% CLT UCL	339.7	95% Jackknife UCL	363.8
95% Standard Bootstrap UCL	335.3	95% Bootstrap-t UCL	1777
95% Hall's Bootstrap UCL	1626	95% Percentile Bootstrap UCL	373.4
95% BCA Bootstrap UCL	488.9		
90% Chebyshev(Mean, Sd) UCL	491.8	95% Chebyshev(Mean, Sd) UCL	644.4
97.5% Chebyshev(Mean, Sd) UCL	856.1	99% Chebyshev(Mean, Sd) UCL	1272

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:50:59 AM
From File	04668_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.6	Mean	15.06
Maximum	24	Median	12.3
SD	4.334	Std. Error of Mean	1.445
Coefficient of Variation	0.288	Skewness	1.278
Mean of logged Data	2.68	SD of logged Data	0.263

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.75	95% Adjusted-CLT UCL (Chen-1995)	18.1
		95% Modified-t UCL (Johnson-1978)	17.85

Nonparametric Distribution Free UCLs

95% CLT UCL	17.44	95% Jackknife UCL	17.75
95% Standard Bootstrap UCL	17.31	95% Bootstrap-t UCL	19.24
95% Hall's Bootstrap UCL	17.83	95% Percentile Bootstrap UCL	17.49
95% BCA Bootstrap UCL	17.89		
90% Chebyshev(Mean, Sd) UCL	19.4	95% Chebyshev(Mean, Sd) UCL	21.36
97.5% Chebyshev(Mean, Sd) UCL	24.08	99% Chebyshev(Mean, Sd) UCL	29.44

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	5.25	Mean	16.36
Maximum	33.8	Median	14.1
SD	8.855	Std. Error of Mean	2.952
Coefficient of Variation	0.541	Skewness	0.697
Mean of logged Data	2.644	SD of logged Data	0.617

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.84	95% Adjusted-CLT UCL (Chen-1995)	21.94
		95% Modified-t UCL (Johnson-1978)	21.96

Nonparametric Distribution Free UCLs

95% CLT UCL	21.21	95% Jackknife UCL	21.84
95% Standard Bootstrap UCL	21.01	95% Bootstrap-t UCL	23.01
95% Hall's Bootstrap UCL	24.88	95% Percentile Bootstrap UCL	21.1
95% BCA Bootstrap UCL	21.75		
90% Chebyshev(Mean, Sd) UCL	25.21	95% Chebyshev(Mean, Sd) UCL	29.22
97.5% Chebyshev(Mean, Sd) UCL	34.79	99% Chebyshev(Mean, Sd) UCL	45.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	51.5	Mean	67.43
Maximum	91.8	Median	59.6
SD	15.6	Std. Error of Mean	5.199
Coefficient of Variation	0.231	Skewness	0.647
Mean of logged Data	4.188	SD of logged Data	0.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	77.1	95% Adjusted-CLT UCL (Chen-1995)	77.18
		95% Modified-t UCL (Johnson-1978)	77.29

Nonparametric Distribution Free UCLs

95% CLT UCL	75.98	95% Jackknife UCL	77.1
95% Standard Bootstrap UCL	75.59	95% Bootstrap-t UCL	78.53
95% Hall's Bootstrap UCL	75.06	95% Percentile Bootstrap UCL	75.5
95% BCA Bootstrap UCL	76.26		
90% Chebyshev(Mean, Sd) UCL	83.03	95% Chebyshev(Mean, Sd) UCL	90.09
97.5% Chebyshev(Mean, Sd) UCL	99.9	99% Chebyshev(Mean, Sd) UCL	119.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.989	Mean	2.068
Maximum	5.73	Median	1.25
SD	1.539	Std. Error of Mean	0.513
Coefficient of Variation	0.744	Skewness	2.007
Mean of logged Data	0.544	SD of logged Data	0.597

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.022	95% Adjusted-CLT UCL (Chen-1995)	3.278
		95% Modified-t UCL (Johnson-1978)	3.079

Nonparametric Distribution Free UCLs

95% CLT UCL	2.912	95% Jackknife UCL	3.022
95% Standard Bootstrap UCL	2.865	95% Bootstrap-t UCL	4.02
95% Hall's Bootstrap UCL	6.06	95% Percentile Bootstrap UCL	2.926
95% BCA Bootstrap UCL	3.268		
90% Chebyshev(Mean, Sd) UCL	3.607	95% Chebyshev(Mean, Sd) UCL	4.304
97.5% Chebyshev(Mean, Sd) UCL	5.272	99% Chebyshev(Mean, Sd) UCL	7.172

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.353	Mean	0.493
Maximum	0.71	Median	0.496
SD	0.104	Std. Error of Mean	0.0346
Coefficient of Variation	0.211	Skewness	0.774
Mean of logged Data	-0.727	SD of logged Data	0.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.557	95% Adjusted-CLT UCL (Chen-1995)	0.559
		95% Modified-t UCL (Johnson-1978)	0.559

Nonparametric Distribution Free UCLs

95% CLT UCL	0.55	95% Jackknife UCL	0.557
95% Standard Bootstrap UCL	0.547	95% Bootstrap-t UCL	0.564
95% Hall's Bootstrap UCL	0.601	95% Percentile Bootstrap UCL	0.55
95% BCA Bootstrap UCL	0.55		
90% Chebyshev(Mean, Sd) UCL	0.597	95% Chebyshev(Mean, Sd) UCL	0.644
97.5% Chebyshev(Mean, Sd) UCL	0.709	99% Chebyshev(Mean, Sd) UCL	0.838

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.47	Mean	1.991
Maximum	2.15	Median	2.02
SD	0.21	Std. Error of Mean	0.07
Coefficient of Variation	0.105	Skewness	-2.276
Mean of logged Data	0.683	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.121	95% Adjusted-CLT UCL (Chen-1995)	2.05
		95% Modified-t UCL (Johnson-1978)	2.112

Nonparametric Distribution Free UCLs

95% CLT UCL	2.106	95% Jackknife UCL	2.121
95% Standard Bootstrap UCL	2.099	95% Bootstrap-t UCL	2.08
95% Hall's Bootstrap UCL	2.067	95% Percentile Bootstrap UCL	2.082
95% BCA Bootstrap UCL	2.064		
90% Chebyshev(Mean, Sd) UCL	2.201	95% Chebyshev(Mean, Sd) UCL	2.296
97.5% Chebyshev(Mean, Sd) UCL	2.428	99% Chebyshev(Mean, Sd) UCL	2.688

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.97	Mean	4.91
Maximum	10.4	Median	2.15
SD	3.705	Std. Error of Mean	1.235
Coefficient of Variation	0.755	Skewness	0.712
Mean of logged Data	1.332	SD of logged Data	0.758

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.206	95% Adjusted-CLT UCL (Chen-1995)	7.255
		95% Modified-t UCL (Johnson-1978)	7.255

Nonparametric Distribution Free UCLs

95% CLT UCL	6.941	95% Jackknife UCL	7.206
95% Standard Bootstrap UCL	6.81	95% Bootstrap-t UCL	7.69
95% Hall's Bootstrap UCL	6.55	95% Percentile Bootstrap UCL	6.877
95% BCA Bootstrap UCL	7.139		
90% Chebyshev(Mean, Sd) UCL	8.615	95% Chebyshev(Mean, Sd) UCL	10.29
97.5% Chebyshev(Mean, Sd) UCL	12.62	99% Chebyshev(Mean, Sd) UCL	17.2

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.29

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	5.473
Maximum	14.8	Median	2.99
SD	5.184	Std. Error of Mean	1.728
Coefficient of Variation	0.947	Skewness	1.388
Mean of logged Data	1.366	SD of logged Data	0.817

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.686	95% Adjusted-CLT UCL (Chen-1995)	9.17
		95% Modified-t UCL (Johnson-1978)	8.82

Nonparametric Distribution Free UCLs

95% CLT UCL	8.316	95% Jackknife UCL	8.686
95% Standard Bootstrap UCL	8.168	95% Bootstrap-t UCL	15.43
95% Hall's Bootstrap UCL	12.5	95% Percentile Bootstrap UCL	8.226
95% BCA Bootstrap UCL	8.908		
90% Chebyshev(Mean, Sd) UCL	10.66	95% Chebyshev(Mean, Sd) UCL	13.01
97.5% Chebyshev(Mean, Sd) UCL	16.26	99% Chebyshev(Mean, Sd) UCL	22.67

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.045	Mean	8.482
Maximum	17.8	Median	4.48
SD	6.508	Std. Error of Mean	2.169
Coefficient of Variation	0.767	Skewness	0.746
Mean of logged Data	1.87	SD of logged Data	0.771

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.52	95% Adjusted-CLT UCL (Chen-1995)	12.63
		95% Modified-t UCL (Johnson-1978)	12.61

Nonparametric Distribution Free UCLs

95% CLT UCL	12.05	95% Jackknife UCL	12.52
95% Standard Bootstrap UCL	11.83	95% Bootstrap-t UCL	13.08
95% Hall's Bootstrap UCL	11.13	95% Percentile Bootstrap UCL	11.95
95% BCA Bootstrap UCL	12.26		
90% Chebyshev(Mean, Sd) UCL	14.99	95% Chebyshev(Mean, Sd) UCL	17.94
97.5% Chebyshev(Mean, Sd) UCL	22.03	99% Chebyshev(Mean, Sd) UCL	30.07

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.37	Mean	5.604
Maximum	10.8	Median	3.27
SD	3.586	Std. Error of Mean	1.195
Coefficient of Variation	0.64	Skewness	0.706
Mean of logged Data	1.544	SD of logged Data	0.628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.827	95% Adjusted-CLT UCL (Chen-1995)	7.871
		95% Modified-t UCL (Johnson-1978)	7.874

Nonparametric Distribution Free UCLs

95% CLT UCL	7.57	95% Jackknife UCL	7.827
95% Standard Bootstrap UCL	7.411	95% Bootstrap-t UCL	8.249
95% Hall's Bootstrap UCL	7.056	95% Percentile Bootstrap UCL	7.402
95% BCA Bootstrap UCL	7.778		
90% Chebyshev(Mean, Sd) UCL	9.19	95% Chebyshev(Mean, Sd) UCL	10.81
97.5% Chebyshev(Mean, Sd) UCL	13.07	99% Chebyshev(Mean, Sd) UCL	17.5

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	3.651
Maximum	7.19	Median	2.125
SD	2.184	Std. Error of Mean	0.728
Coefficient of Variation	0.598	Skewness	0.829
Mean of logged Data	1.145	SD of logged Data	0.566

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.004	95% Adjusted-CLT UCL (Chen-1995)	5.063

		95% Modified-t UCL (Johnson-1978)	5.038

Nonparametric Distribution Free UCLs

95% CLT UCL	4.848	95% Jackknife UCL	5.004
95% Standard Bootstrap UCL	4.798	95% Bootstrap-t UCL	5.506
95% Hall's Bootstrap UCL	4.605	95% Percentile Bootstrap UCL	4.838
95% BCA Bootstrap UCL	4.973		
90% Chebyshev(Mean, Sd) UCL	5.835	95% Chebyshev(Mean, Sd) UCL	6.824
97.5% Chebyshev(Mean, Sd) UCL	8.197	99% Chebyshev(Mean, Sd) UCL	10.89

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.824

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	7.462
Maximum	16.5	Median	3.64
SD	6.225	Std. Error of Mean	2.075
Coefficient of Variation	0.834	Skewness	0.65
Mean of logged Data	1.658	SD of logged Data	0.908

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.32	95% Adjusted-CLT UCL (Chen-1995)	11.36
		95% Modified-t UCL (Johnson-1978)	11.4

Nonparametric Distribution Free UCLs

95% CLT UCL	10.88	95% Jackknife UCL	11.32
95% Standard Bootstrap UCL	10.66	95% Bootstrap-t UCL	12.13
95% Hall's Bootstrap UCL	9.903	95% Percentile Bootstrap UCL	10.68
95% BCA Bootstrap UCL	11.05		
90% Chebyshev(Mean, Sd) UCL	13.69	95% Chebyshev(Mean, Sd) UCL	16.51
97.5% Chebyshev(Mean, Sd) UCL	20.42	99% Chebyshev(Mean, Sd) UCL	28.11

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.53	Mean	3.094
Maximum	3.305	Median	3.11
SD	0.243	Std. Error of Mean	0.0809
Coefficient of Variation	0.0785	Skewness	-1.763
Mean of logged Data	1.126	SD of logged Data	0.0835

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.244	95% Adjusted-CLT UCL (Chen-1995)	3.176
		95% Modified-t UCL (Johnson-1978)	3.236

Nonparametric Distribution Free UCLs

95% CLT UCL	3.227	95% Jackknife UCL	3.244
95% Standard Bootstrap UCL	3.218	95% Bootstrap-t UCL	3.202
95% Hall's Bootstrap UCL	3.19	95% Percentile Bootstrap UCL	3.206
95% BCA Bootstrap UCL	3.189		
90% Chebyshev(Mean, Sd) UCL	3.337	95% Chebyshev(Mean, Sd) UCL	3.447
97.5% Chebyshev(Mean, Sd) UCL	3.599	99% Chebyshev(Mean, Sd) UCL	3.899

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	7.756
Maximum	18	Median	3.63
SD	6.773	Std. Error of Mean	2.258
Coefficient of Variation	0.873	Skewness	0.726
Mean of logged Data	1.67	SD of logged Data	0.937

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.95	95% Adjusted-CLT UCL (Chen-1995)	12.05
		95% Modified-t UCL (Johnson-1978)	12.04

Nonparametric Distribution Free UCLs

95% CLT UCL	11.47	95% Jackknife UCL	11.95
95% Standard Bootstrap UCL	11.25	95% Bootstrap-t UCL	12.9
95% Hall's Bootstrap UCL	10.63	95% Percentile Bootstrap UCL	11.45
95% BCA Bootstrap UCL	11.98		
90% Chebyshev(Mean, Sd) UCL	14.53	95% Chebyshev(Mean, Sd) UCL	17.6
97.5% Chebyshev(Mean, Sd) UCL	21.85	99% Chebyshev(Mean, Sd) UCL	30.22

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.185	Mean	1.261
Maximum	1.325	Median	1.245
SD	0.05	Std. Error of Mean	0.0167
Coefficient of Variation	0.0396	Skewness	-0.0758
Mean of logged Data	0.231	SD of logged Data	0.0397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.292	95% Adjusted-CLT UCL (Chen-1995)	1.288
		95% Modified-t UCL (Johnson-1978)	1.292

Nonparametric Distribution Free UCLs

95% CLT UCL	1.289	95% Jackknife UCL	1.292
95% Standard Bootstrap UCL	1.287	95% Bootstrap-t UCL	1.292
95% Hall's Bootstrap UCL	1.285	95% Percentile Bootstrap UCL	1.286
95% BCA Bootstrap UCL	1.287		
90% Chebyshev(Mean, Sd) UCL	1.311	95% Chebyshev(Mean, Sd) UCL	1.334
97.5% Chebyshev(Mean, Sd) UCL	1.365	99% Chebyshev(Mean, Sd) UCL	1.427

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.19	Mean	5.275
Maximum	10.2	Median	3.27
SD	3.262	Std. Error of Mean	1.087
Coefficient of Variation	0.618	Skewness	0.845
Mean of logged Data	1.502	SD of logged Data	0.589

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.297	95% Adjusted-CLT UCL (Chen-1995)	7.391
		95% Modified-t UCL (Johnson-1978)	7.348

Nonparametric Distribution Free UCLs

95% CLT UCL	7.063	95% Jackknife UCL	7.297
95% Standard Bootstrap UCL	6.994	95% Bootstrap-t UCL	8.103
95% Hall's Bootstrap UCL	6.684	95% Percentile Bootstrap UCL	7.017
95% BCA Bootstrap UCL	7.23		
90% Chebyshev(Mean, Sd) UCL	8.537	95% Chebyshev(Mean, Sd) UCL	10.01
97.5% Chebyshev(Mean, Sd) UCL	12.06	99% Chebyshev(Mean, Sd) UCL	16.09

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.42	Mean	3.893
Maximum	9.72	Median	3.13
SD	2.328	Std. Error of Mean	0.776
Coefficient of Variation	0.598	Skewness	2.391
Mean of logged Data	1.251	SD of logged Data	0.449

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.337	95% Adjusted-CLT UCL (Chen-1995)	5.831
		95% Modified-t UCL (Johnson-1978)	5.44

Nonparametric Distribution Free UCLs

95% CLT UCL	5.17	95% Jackknife UCL	5.337
95% Standard Bootstrap UCL	5.102	95% Bootstrap-t UCL	8.502
95% Hall's Bootstrap UCL	10.4	95% Percentile Bootstrap UCL	5.311
95% BCA Bootstrap UCL	5.97		
90% Chebyshev(Mean, Sd) UCL	6.222	95% Chebyshev(Mean, Sd) UCL	7.276
97.5% Chebyshev(Mean, Sd) UCL	8.74	99% Chebyshev(Mean, Sd) UCL	11.62

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.12	Mean	4.686
Maximum	8.27	Median	3.27
SD	2.488	Std. Error of Mean	0.829
Coefficient of Variation	0.531	Skewness	0.79
Mean of logged Data	1.427	SD of logged Data	0.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.228	95% Adjusted-CLT UCL (Chen-1995)	6.283
		95% Modified-t UCL (Johnson-1978)	6.264

Nonparametric Distribution Free UCLs

95% CLT UCL	6.05	95% Jackknife UCL	6.228
95% Standard Bootstrap UCL	5.97	95% Bootstrap-t UCL	6.525
95% Hall's Bootstrap UCL	5.648	95% Percentile Bootstrap UCL	5.943
95% BCA Bootstrap UCL	6.211		
90% Chebyshev(Mean, Sd) UCL	7.174	95% Chebyshev(Mean, Sd) UCL	8.301
97.5% Chebyshev(Mean, Sd) UCL	9.864	99% Chebyshev(Mean, Sd) UCL	12.94

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.045	Mean	7.551
Maximum	16.3	Median	3.3
SD	5.697	Std. Error of Mean	1.899
Coefficient of Variation	0.754	Skewness	0.736
Mean of logged Data	1.765	SD of logged Data	0.751

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.08	95% Adjusted-CLT UCL (Chen-1995)	11.17
		95% Modified-t UCL (Johnson-1978)	11.16

Nonparametric Distribution Free UCLs

95% CLT UCL	10.67	95% Jackknife UCL	11.08
95% Standard Bootstrap UCL	10.49	95% Bootstrap-t UCL	11.91
95% Hall's Bootstrap UCL	9.906	95% Percentile Bootstrap UCL	10.59
95% BCA Bootstrap UCL	11.23		
90% Chebyshev(Mean, Sd) UCL	13.25	95% Chebyshev(Mean, Sd) UCL	15.83
97.5% Chebyshev(Mean, Sd) UCL	19.41	99% Chebyshev(Mean, Sd) UCL	26.44

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 15.83

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:56:48 AM
From File	05106_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.7	Mean	11.66
Maximum	12.9	Median	11.5
SD	0.819	Std. Error of Mean	0.273
Coefficient of Variation	0.0702	Skewness	0.37
Mean of logged Data	2.454	SD of logged Data	0.0697

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.16	95% Adjusted-CLT UCL (Chen-1995)	12.14
		95% Modified-t UCL (Johnson-1978)	12.17

Nonparametric Distribution Free UCLs

95% CLT UCL	12.1	95% Jackknife UCL	12.16
95% Standard Bootstrap UCL	12.09	95% Bootstrap-t UCL	12.24
95% Hall's Bootstrap UCL	12.11	95% Percentile Bootstrap UCL	12.08
95% BCA Bootstrap UCL	12.11		
90% Chebyshev(Mean, Sd) UCL	12.47	95% Chebyshev(Mean, Sd) UCL	12.85
97.5% Chebyshev(Mean, Sd) UCL	13.36	99% Chebyshev(Mean, Sd) UCL	14.37

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.49	Mean	9.653
Maximum	10.7	Median	9.78
SD	0.801	Std. Error of Mean	0.267
Coefficient of Variation	0.0829	Skewness	-0.103
Mean of logged Data	2.264	SD of logged Data	0.0836

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.15	95% Adjusted-CLT UCL (Chen-1995)	10.08
		95% Modified-t UCL (Johnson-1978)	10.15

Nonparametric Distribution Free UCLs

95% CLT UCL	10.09	95% Jackknife UCL	10.15
95% Standard Bootstrap UCL	10.06	95% Bootstrap-t UCL	10.17
95% Hall's Bootstrap UCL	10.03	95% Percentile Bootstrap UCL	10.09
95% BCA Bootstrap UCL	10.06		
90% Chebyshev(Mean, Sd) UCL	10.45	95% Chebyshev(Mean, Sd) UCL	10.82
97.5% Chebyshev(Mean, Sd) UCL	11.32	99% Chebyshev(Mean, Sd) UCL	12.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	40	Mean	44.14
Maximum	47.7	Median	44.8
SD	2.86	Std. Error of Mean	0.953
Coefficient of Variation	0.0648	Skewness	-0.343
Mean of logged Data	3.786	SD of logged Data	0.0655

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.92	95% Adjusted-CLT UCL (Chen-1995)	45.6
		95% Modified-t UCL (Johnson-1978)	45.9

Nonparametric Distribution Free UCLs

95% CLT UCL	45.71	95% Jackknife UCL	45.92
95% Standard Bootstrap UCL	45.61	95% Bootstrap-t UCL	45.86
95% Hall's Bootstrap UCL	45.51	95% Percentile Bootstrap UCL	45.69
95% BCA Bootstrap UCL	45.5		
90% Chebyshev(Mean, Sd) UCL	47	95% Chebyshev(Mean, Sd) UCL	48.3
97.5% Chebyshev(Mean, Sd) UCL	50.1	99% Chebyshev(Mean, Sd) UCL	53.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.852	Mean	1.353
Maximum	1.96	Median	1.31
SD	0.399	Std. Error of Mean	0.133
Coefficient of Variation	0.295	Skewness	0.508
Mean of logged Data	0.263	SD of logged Data	0.295

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.6	95% Adjusted-CLT UCL (Chen-1995)	1.596
		95% Modified-t UCL (Johnson-1978)	1.604

Nonparametric Distribution Free UCLs

95% CLT UCL	1.572	95% Jackknife UCL	1.6
95% Standard Bootstrap UCL	1.563	95% Bootstrap-t UCL	1.656
95% Hall's Bootstrap UCL	1.745	95% Percentile Bootstrap UCL	1.567
95% BCA Bootstrap UCL	1.585		
90% Chebyshev(Mean, Sd) UCL	1.752	95% Chebyshev(Mean, Sd) UCL	1.933
97.5% Chebyshev(Mean, Sd) UCL	2.184	99% Chebyshev(Mean, Sd) UCL	2.677

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.486	Mean	0.514
Maximum	0.554	Median	0.515
SD	0.0198	Std. Error of Mean	0.00661
Coefficient of Variation	0.0386	Skewness	0.735
Mean of logged Data	-0.667	SD of logged Data	0.0382

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.526	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.526

Nonparametric Distribution Free UCLs

95% CLT UCL	0.525	95% Jackknife UCL	0.526
95% Standard Bootstrap UCL	0.524	95% Bootstrap-t UCL	0.528
95% Hall's Bootstrap UCL	0.531	95% Percentile Bootstrap UCL	0.525
95% BCA Bootstrap UCL	0.526		
90% Chebyshev(Mean, Sd) UCL	0.534	95% Chebyshev(Mean, Sd) UCL	0.543
97.5% Chebyshev(Mean, Sd) UCL	0.555	99% Chebyshev(Mean, Sd) UCL	0.579

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.6	Mean	1.991
Maximum	2.13	Median	2.055
SD	0.169	Std. Error of Mean	0.0562
Coefficient of Variation	0.0847	Skewness	-1.86
Mean of logged Data	0.685	SD of logged Data	0.0909

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.096	95% Adjusted-CLT UCL (Chen-1995)	2.046
		95% Modified-t UCL (Johnson-1978)	2.09

Nonparametric Distribution Free UCLs

95% CLT UCL	2.084	95% Jackknife UCL	2.096
95% Standard Bootstrap UCL	2.077	95% Bootstrap-t UCL	2.066
95% Hall's Bootstrap UCL	2.054	95% Percentile Bootstrap UCL	2.072
95% BCA Bootstrap UCL	2.056		
90% Chebyshev(Mean, Sd) UCL	2.16	95% Chebyshev(Mean, Sd) UCL	2.236
97.5% Chebyshev(Mean, Sd) UCL	2.342	99% Chebyshev(Mean, Sd) UCL	2.551

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	6.834
Maximum	18.1	Median	2.105
SD	7.203	Std. Error of Mean	2.401
Coefficient of Variation	1.054	Skewness	0.913
Mean of logged Data	1.414	SD of logged Data	1.034

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.3	95% Adjusted-CLT UCL (Chen-1995)	11.56
		95% Modified-t UCL (Johnson-1978)	11.42

Nonparametric Distribution Free UCLs

95% CLT UCL	10.78	95% Jackknife UCL	11.3
95% Standard Bootstrap UCL	10.57	95% Bootstrap-t UCL	12.64
95% Hall's Bootstrap UCL	9.162	95% Percentile Bootstrap UCL	10.42
95% BCA Bootstrap UCL	11.59		
90% Chebyshev(Mean, Sd) UCL	14.04	95% Chebyshev(Mean, Sd) UCL	17.3
97.5% Chebyshev(Mean, Sd) UCL	21.83	99% Chebyshev(Mean, Sd) UCL	30.72

Suggested UCL to Use

95% Hall's Bootstrap UCL	9.162

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.83	Mean	8.645
Maximum	23.6	Median	2.095
SD	9.976	Std. Error of Mean	3.325
Coefficient of Variation	1.154	Skewness	0.883

Mean of logged Data	1.495	SD of logged Data	1.193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.83	95% Adjusted-CLT UCL (Chen-1995)	15.16
		95% Modified-t UCL (Johnson-1978)	14.99

Nonparametric Distribution Free UCLs

95% CLT UCL	14.11	95% Jackknife UCL	14.83
95% Standard Bootstrap UCL	13.86	95% Bootstrap-t UCL	16.17
95% Hall's Bootstrap UCL	11.82	95% Percentile Bootstrap UCL	13.83
95% BCA Bootstrap UCL	15.27		
90% Chebyshev(Mean, Sd) UCL	18.62	95% Chebyshev(Mean, Sd) UCL	23.14
97.5% Chebyshev(Mean, Sd) UCL	29.41	99% Chebyshev(Mean, Sd) UCL	41.73

Suggested UCL to Use

95% Hall's Bootstrap UCL	11.82

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.24	Mean	12.37
Maximum	33.6	Median	3.22
SD	14.11	Std. Error of Mean	4.702
Coefficient of Variation	1.14	Skewness	0.887
Mean of logged Data	1.874	SD of logged Data	1.177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.12	95% Adjusted-CLT UCL (Chen-1995)	21.59
		95% Modified-t UCL (Johnson-1978)	21.35

Nonparametric Distribution Free UCLs

95% CLT UCL	20.11	95% Jackknife UCL	21.12
95% Standard Bootstrap UCL	19.66	95% Bootstrap-t UCL	23.1
95% Hall's Bootstrap UCL	16.89	95% Percentile Bootstrap UCL	19.29
95% BCA Bootstrap UCL	21.5		
90% Chebyshev(Mean, Sd) UCL	26.48	95% Chebyshev(Mean, Sd) UCL	32.87

97.5% Chebyshev(Mean, Sd) UCL	41.74	99% Chebyshev(Mean, Sd) UCL	59.16

Suggested UCL to Use

95% Hall's Bootstrap UCL	16.89

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.035	Mean	7.877
Maximum	18.8	Median	3.245
SD	7.079	Std. Error of Mean	2.36
Coefficient of Variation	0.899	Skewness	0.896
Mean of logged Data	1.72	SD of logged Data	0.846

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.26	95% Adjusted-CLT UCL (Chen-1995)	12.51
		95% Modified-t UCL (Johnson-1978)	12.38

Nonparametric Distribution Free UCLs

95% CLT UCL	11.76	95% Jackknife UCL	12.26
95% Standard Bootstrap UCL	11.56	95% Bootstrap-t UCL	13.27
95% Hall's Bootstrap UCL	10.14	95% Percentile Bootstrap UCL	11.46
95% BCA Bootstrap UCL	12.35		
90% Chebyshev(Mean, Sd) UCL	14.96	95% Chebyshev(Mean, Sd) UCL	18.16
97.5% Chebyshev(Mean, Sd) UCL	22.61	99% Chebyshev(Mean, Sd) UCL	31.35

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.16

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	5.323
Maximum	13.2	Median	2.105
SD	4.93	Std. Error of Mean	1.643
Coefficient of Variation	0.926	Skewness	0.929

Mean of logged Data	1.306	SD of logged Data	0.872

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.378	95% Adjusted-CLT UCL (Chen-1995)	8.569
		95% Modified-t UCL (Johnson-1978)	8.463

Nonparametric Distribution Free UCLs

95% CLT UCL	8.026	95% Jackknife UCL	8.378
95% Standard Bootstrap UCL	7.844	95% Bootstrap-t UCL	9.386
95% Hall's Bootstrap UCL	6.925	95% Percentile Bootstrap UCL	7.801
95% BCA Bootstrap UCL	8.424		
90% Chebyshev(Mean, Sd) UCL	10.25	95% Chebyshev(Mean, Sd) UCL	12.49
97.5% Chebyshev(Mean, Sd) UCL	15.58	99% Chebyshev(Mean, Sd) UCL	21.67

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.49

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.975	Mean	9.598
Maximum	26.5	Median	2.105
SD	11.3	Std. Error of Mean	3.768
Coefficient of Variation	1.178	Skewness	0.892
Mean of logged Data	1.56	SD of logged Data	1.232

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.61	95% Adjusted-CLT UCL (Chen-1995)	16.99
		95% Modified-t UCL (Johnson-1978)	16.79

Nonparametric Distribution Free UCLs

95% CLT UCL	15.8	95% Jackknife UCL	16.61
95% Standard Bootstrap UCL	15.4	95% Bootstrap-t UCL	18.47
95% Hall's Bootstrap UCL	13.23	95% Percentile Bootstrap UCL	15.19
95% BCA Bootstrap UCL	16.77		
90% Chebyshev(Mean, Sd) UCL	20.9	95% Chebyshev(Mean, Sd) UCL	26.02
97.5% Chebyshev(Mean, Sd) UCL	33.13	99% Chebyshev(Mean, Sd) UCL	47.09

Suggested UCL to Use

95% Hall's Bootstrap UCL	13.23

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.035	Mean	3.606
Maximum	4.85	Median	3.245
SD	0.666	Std. Error of Mean	0.222
Coefficient of Variation	0.185	Skewness	1.103
Mean of logged Data	1.268	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.019	95% Adjusted-CLT UCL (Chen-1995)	4.058
		95% Modified-t UCL (Johnson-1978)	4.032

Nonparametric Distribution Free UCLs

95% CLT UCL	3.971	95% Jackknife UCL	4.019
95% Standard Bootstrap UCL	3.948	95% Bootstrap-t UCL	4.226
95% Hall's Bootstrap UCL	3.894	95% Percentile Bootstrap UCL	3.959
95% BCA Bootstrap UCL	4.039		
90% Chebyshev(Mean, Sd) UCL	4.272	95% Chebyshev(Mean, Sd) UCL	4.574
97.5% Chebyshev(Mean, Sd) UCL	4.993	99% Chebyshev(Mean, Sd) UCL	5.815

Suggested UCL to Use

95% Student's-t UCL	4.019	or 95% Modified-t UCL	4.032

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	11.94
Maximum	34.6	Median	2.22
SD	14.75	Std. Error of Mean	4.917
Coefficient of Variation	1.235	Skewness	0.954
Mean of logged Data	1.679	SD of logged Data	1.325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.09	95% Adjusted-CLT UCL (Chen-1995)	21.7
		95% Modified-t UCL (Johnson-1978)	21.35

Nonparametric Distribution Free UCLs

95% CLT UCL	20.03	95% Jackknife UCL	21.09
95% Standard Bootstrap UCL	19.72	95% Bootstrap-t UCL	25.19
95% Hall's Bootstrap UCL	17.34	95% Percentile Bootstrap UCL	19.84
95% BCA Bootstrap UCL	20.89		
90% Chebyshev(Mean, Sd) UCL	26.69	95% Chebyshev(Mean, Sd) UCL	33.37
97.5% Chebyshev(Mean, Sd) UCL	42.65	99% Chebyshev(Mean, Sd) UCL	60.86

Suggested UCL to Use

95% Hall's Bootstrap UCL	17.34

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.215	Mean	1.27
Maximum	1.31	Median	1.285
SD	0.0309	Std. Error of Mean	0.0103
Coefficient of Variation	0.0243	Skewness	-0.624
Mean of logged Data	0.239	SD of logged Data	0.0245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.289	95% Adjusted-CLT UCL (Chen-1995)	1.285
		95% Modified-t UCL (Johnson-1978)	1.289

Nonparametric Distribution Free UCLs

95% CLT UCL	1.287	95% Jackknife UCL	1.289
95% Standard Bootstrap UCL	1.286	95% Bootstrap-t UCL	1.287
95% Hall's Bootstrap UCL	1.284	95% Percentile Bootstrap UCL	1.285
95% BCA Bootstrap UCL	1.284		
90% Chebyshev(Mean, Sd) UCL	1.301	95% Chebyshev(Mean, Sd) UCL	1.315
97.5% Chebyshev(Mean, Sd) UCL	1.334	99% Chebyshev(Mean, Sd) UCL	1.373

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.035	Mean	8.966
Maximum	22.4	Median	3.245
SD	8.719	Std. Error of Mean	2.906
Coefficient of Variation	0.972	Skewness	0.895
Mean of logged Data	1.778	SD of logged Data	0.933

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.37	95% Adjusted-CLT UCL (Chen-1995)	14.67
		95% Modified-t UCL (Johnson-1978)	14.51

Nonparametric Distribution Free UCLs

95% CLT UCL	13.75	95% Jackknife UCL	14.37
95% Standard Bootstrap UCL	13.39	95% Bootstrap-t UCL	15.6
95% Hall's Bootstrap UCL	11.75	95% Percentile Bootstrap UCL	13.24
95% BCA Bootstrap UCL	14.61		
90% Chebyshev(Mean, Sd) UCL	17.68	95% Chebyshev(Mean, Sd) UCL	21.63
97.5% Chebyshev(Mean, Sd) UCL	27.12	99% Chebyshev(Mean, Sd) UCL	37.88

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	21.63

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.45	Mean	2.651
Maximum	7.32	Median	2.13
SD	1.789	Std. Error of Mean	0.596
Coefficient of Variation	0.675	Skewness	2.757
Mean of logged Data	0.852	SD of logged Data	0.466

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.76	95% Adjusted-CLT UCL (Chen-1995)	4.217
		95% Modified-t UCL (Johnson-1978)	3.851

Nonparametric Distribution Free UCLs

95% CLT UCL	3.632	95% Jackknife UCL	3.76
95% Standard Bootstrap UCL	3.571	95% Bootstrap-t UCL	6.291
95% Hall's Bootstrap UCL	8.008	95% Percentile Bootstrap UCL	3.703
95% BCA Bootstrap UCL	4.359		
90% Chebyshev(Mean, Sd) UCL	4.44	95% Chebyshev(Mean, Sd) UCL	5.25
97.5% Chebyshev(Mean, Sd) UCL	6.375	99% Chebyshev(Mean, Sd) UCL	8.584

Suggested UCL to Use

95% Student's-t UCL	3.76	or 95% Modified-t UCL	3.851

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.035	Mean	5.79
Maximum	12.5	Median	3.245
SD	4.022	Std. Error of Mean	1.341
Coefficient of Variation	0.695	Skewness	1.042
Mean of logged Data	1.567	SD of logged Data	0.622

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.283	95% Adjusted-CLT UCL (Chen-1995)	8.493
		95% Modified-t UCL (Johnson-1978)	8.361

Nonparametric Distribution Free UCLs

95% CLT UCL	7.995	95% Jackknife UCL	8.283
95% Standard Bootstrap UCL	7.906	95% Bootstrap-t UCL	9.924
95% Hall's Bootstrap UCL	7.53	95% Percentile Bootstrap UCL	7.939
95% BCA Bootstrap UCL	8.253		
90% Chebyshev(Mean, Sd) UCL	9.812	95% Chebyshev(Mean, Sd) UCL	11.63
97.5% Chebyshev(Mean, Sd) UCL	14.16	99% Chebyshev(Mean, Sd) UCL	19.13

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.63

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.19	Mean	12.54
Maximum	34.8	Median	3.22
SD	14.49	Std. Error of Mean	4.829
Coefficient of Variation	1.156	Skewness	0.946
Mean of logged Data	1.876	SD of logged Data	1.186

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.52	95% Adjusted-CLT UCL (Chen-1995)	22.11
		95% Modified-t UCL (Johnson-1978)	21.77

Nonparametric Distribution Free UCLs

95% CLT UCL	20.48	95% Jackknife UCL	21.52
95% Standard Bootstrap UCL	19.99	95% Bootstrap-t UCL	25.44
95% Hall's Bootstrap UCL	17.33	95% Percentile Bootstrap UCL	20.29
95% BCA Bootstrap UCL	21.32		
90% Chebyshev(Mean, Sd) UCL	27.02	95% Chebyshev(Mean, Sd) UCL	33.59
97.5% Chebyshev(Mean, Sd) UCL	42.69	99% Chebyshev(Mean, Sd) UCL	60.58

Suggested UCL to Use

95% Hall's Bootstrap UCL	17.33

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:57:53 AM
From File	05107_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.2	Mean	141.3
Maximum	672	Median	17.7
SD	223.3	Std. Error of Mean	74.45
Coefficient of Variation	1.581	Skewness	2.028
Mean of logged Data	3.797	SD of logged Data	1.585

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	279.7	95% Adjusted-CLT UCL (Chen-1995)	317.5
		95% Modified-t UCL (Johnson-1978)	288.1

Nonparametric Distribution Free UCLs

95% CLT UCL	263.7	95% Jackknife UCL	279.7
95% Standard Bootstrap UCL	255.9	95% Bootstrap-t UCL	454.2
95% Hall's Bootstrap UCL	369.2	95% Percentile Bootstrap UCL	267.3
95% BCA Bootstrap UCL	310		
90% Chebyshev(Mean, Sd) UCL	364.6	95% Chebyshev(Mean, Sd) UCL	465.8
97.5% Chebyshev(Mean, Sd) UCL	606.2	99% Chebyshev(Mean, Sd) UCL	882

Suggested UCL to Use

95% Hall's Bootstrap UCL	369.2

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.42	Mean	13.91
Maximum	25.9	Median	12.1
SD	5.386	Std. Error of Mean	1.795
Coefficient of Variation	0.387	Skewness	1.565
Mean of logged Data	2.577	SD of logged Data	0.341

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.25	95% Adjusted-CLT UCL (Chen-1995)	17.87
		95% Modified-t UCL (Johnson-1978)	17.41

Nonparametric Distribution Free UCLs

95% CLT UCL	16.87	95% Jackknife UCL	17.25
95% Standard Bootstrap UCL	16.68	95% Bootstrap-t UCL	19.64
95% Hall's Bootstrap UCL	18.71	95% Percentile Bootstrap UCL	16.97
95% BCA Bootstrap UCL	17.46		
90% Chebyshev(Mean, Sd) UCL	19.3	95% Chebyshev(Mean, Sd) UCL	21.74
97.5% Chebyshev(Mean, Sd) UCL	25.12	99% Chebyshev(Mean, Sd) UCL	31.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	43.4	Mean	64.62
Maximum	99.3	Median	54.7
SD	22.01	Std. Error of Mean	7.338
Coefficient of Variation	0.341	Skewness	0.737
Mean of logged Data	4.12	SD of logged Data	0.325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	78.27	95% Adjusted-CLT UCL (Chen-1995)	78.62
		95% Modified-t UCL (Johnson-1978)	78.57

Nonparametric Distribution Free UCLs

95% CLT UCL	76.69	95% Jackknife UCL	78.27
95% Standard Bootstrap UCL	75.93	95% Bootstrap-t UCL	81.2
95% Hall's Bootstrap UCL	73.95	95% Percentile Bootstrap UCL	76.51
95% BCA Bootstrap UCL	77.99		
90% Chebyshev(Mean, Sd) UCL	86.63	95% Chebyshev(Mean, Sd) UCL	96.61
97.5% Chebyshev(Mean, Sd) UCL	110.4	99% Chebyshev(Mean, Sd) UCL	137.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.781	Mean	1.389
Maximum	2.21	Median	1.42
SD	0.472	Std. Error of Mean	0.157
Coefficient of Variation	0.339	Skewness	0.323
Mean of logged Data	0.275	SD of logged Data	0.351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.682	95% Adjusted-CLT UCL (Chen-1995)	1.666
		95% Modified-t UCL (Johnson-1978)	1.684

Nonparametric Distribution Free UCLs

95% CLT UCL	1.648	95% Jackknife UCL	1.682
95% Standard Bootstrap UCL	1.631	95% Bootstrap-t UCL	1.707
95% Hall's Bootstrap UCL	1.667	95% Percentile Bootstrap UCL	1.646
95% BCA Bootstrap UCL	1.646		
90% Chebyshev(Mean, Sd) UCL	1.861	95% Chebyshev(Mean, Sd) UCL	2.074
97.5% Chebyshev(Mean, Sd) UCL	2.371	99% Chebyshev(Mean, Sd) UCL	2.953

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.493	Mean	0.63
Maximum	1.33	Median	0.52
SD	0.274	Std. Error of Mean	0.0913
Coefficient of Variation	0.435	Skewness	2.6
Mean of logged Data	-0.52	SD of logged Data	0.328

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.8	95% Adjusted-CLT UCL (Chen-1995)	0.865
		95% Modified-t UCL (Johnson-1978)	0.813

Nonparametric Distribution Free UCLs

95% CLT UCL	0.78	95% Jackknife UCL	0.8
95% Standard Bootstrap UCL	0.775	95% Bootstrap-t UCL	2.923
95% Hall's Bootstrap UCL	2.049	95% Percentile Bootstrap UCL	0.786
95% BCA Bootstrap UCL	0.876		
90% Chebyshev(Mean, Sd) UCL	0.904	95% Chebyshev(Mean, Sd) UCL	1.028
97.5% Chebyshev(Mean, Sd) UCL	1.201	99% Chebyshev(Mean, Sd) UCL	1.539

Suggested UCL to Use

95% Student's-t UCL	0.8	or 95% Modified-t UCL	0.813

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.8	Mean	2.326
Maximum	3.8	Median	2.09
SD	0.631	Std. Error of Mean	0.21
Coefficient of Variation	0.271	Skewness	2.008
Mean of logged Data	0.817	SD of logged Data	0.233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.717	95% Adjusted-CLT UCL (Chen-1995)	2.822
		95% Modified-t UCL (Johnson-1978)	2.74

Nonparametric Distribution Free UCLs

95% CLT UCL	2.671	95% Jackknife UCL	2.717
95% Standard Bootstrap UCL	2.648	95% Bootstrap-t UCL	4.033
95% Hall's Bootstrap UCL	5.533	95% Percentile Bootstrap UCL	2.653
95% BCA Bootstrap UCL	2.78		
90% Chebyshev(Mean, Sd) UCL	2.957	95% Chebyshev(Mean, Sd) UCL	3.242
97.5% Chebyshev(Mean, Sd) UCL	3.639	99% Chebyshev(Mean, Sd) UCL	4.418

Suggested UCL to Use

95% Student's-t UCL	2.717	or 95% Modified-t UCL	2.74

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	8.982
Maximum	24.7	Median	5.21
SD	8.98	Std. Error of Mean	2.993
Coefficient of Variation	1	Skewness	1.004
Mean of logged Data	1.723	SD of logged Data	1.032

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.55	95% Adjusted-CLT UCL (Chen-1995)	14.98
		95% Modified-t UCL (Johnson-1978)	14.72

Nonparametric Distribution Free UCLs

95% CLT UCL	13.91	95% Jackknife UCL	14.55
95% Standard Bootstrap UCL	13.57	95% Bootstrap-t UCL	17.47
95% Hall's Bootstrap UCL	13.12	95% Percentile Bootstrap UCL	13.9
95% BCA Bootstrap UCL	14.31		
90% Chebyshev(Mean, Sd) UCL	17.96	95% Chebyshev(Mean, Sd) UCL	22.03
97.5% Chebyshev(Mean, Sd) UCL	27.68	99% Chebyshev(Mean, Sd) UCL	38.77

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	10.67
Maximum	29.6	Median	5.89
SD	10.98	Std. Error of Mean	3.66
Coefficient of Variation	1.029	Skewness	0.931
Mean of logged Data	1.838	SD of logged Data	1.106

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.47	95% Adjusted-CLT UCL (Chen-1995)	17.9
		95% Modified-t UCL (Johnson-1978)	17.66

Nonparametric Distribution Free UCLs

95% CLT UCL	16.69	95% Jackknife UCL	17.47
95% Standard Bootstrap UCL	16.44	95% Bootstrap-t UCL	19.64
95% Hall's Bootstrap UCL	14.91	95% Percentile Bootstrap UCL	16.23
95% BCA Bootstrap UCL	17.9		
90% Chebyshev(Mean, Sd) UCL	21.65	95% Chebyshev(Mean, Sd) UCL	26.62
97.5% Chebyshev(Mean, Sd) UCL	33.52	99% Chebyshev(Mean, Sd) UCL	47.08

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.075	Mean	15.92
Maximum	40.9	Median	9.05
SD	15.77	Std. Error of Mean	5.255
Coefficient of Variation	0.99	Skewness	0.869
Mean of logged Data	2.276	SD of logged Data	1.071

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.7	95% Adjusted-CLT UCL (Chen-1995)	26.2
		95% Modified-t UCL (Johnson-1978)	25.95

Nonparametric Distribution Free UCLs

95% CLT UCL	24.57	95% Jackknife UCL	25.7
95% Standard Bootstrap UCL	24.06	95% Bootstrap-t UCL	29.66
95% Hall's Bootstrap UCL	22.12	95% Percentile Bootstrap UCL	23.9
95% BCA Bootstrap UCL	25.2		
90% Chebyshev(Mean, Sd) UCL	31.69	95% Chebyshev(Mean, Sd) UCL	38.83
97.5% Chebyshev(Mean, Sd) UCL	48.74	99% Chebyshev(Mean, Sd) UCL	68.22

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.89	Mean	8.543
Maximum	21.8	Median	4.15
SD	7.645	Std. Error of Mean	2.548
Coefficient of Variation	0.895	Skewness	0.978
Mean of logged Data	1.805	SD of logged Data	0.846

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.28	95% Adjusted-CLT UCL (Chen-1995)	13.62
		95% Modified-t UCL (Johnson-1978)	13.42

Nonparametric Distribution Free UCLs

95% CLT UCL	12.74	95% Jackknife UCL	13.28
95% Standard Bootstrap UCL	12.58	95% Bootstrap-t UCL	14.63
95% Hall's Bootstrap UCL	11.17	95% Percentile Bootstrap UCL	12.52
95% BCA Bootstrap UCL	12.96		
90% Chebyshev(Mean, Sd) UCL	16.19	95% Chebyshev(Mean, Sd) UCL	19.65
97.5% Chebyshev(Mean, Sd) UCL	24.46	99% Chebyshev(Mean, Sd) UCL	33.9

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.65

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	6.604
Maximum	16.5	Median	3.66
SD	6.148	Std. Error of Mean	2.049
Coefficient of Variation	0.931	Skewness	0.97
Mean of logged Data	1.506	SD of logged Data	0.907

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.42	95% Adjusted-CLT UCL (Chen-1995)	10.68
		95% Modified-t UCL (Johnson-1978)	10.53

Nonparametric Distribution Free UCLs

95% CLT UCL	9.976	95% Jackknife UCL	10.42
95% Standard Bootstrap UCL	9.821	95% Bootstrap-t UCL	12.46
95% Hall's Bootstrap UCL	9.144	95% Percentile Bootstrap UCL	9.863
95% BCA Bootstrap UCL	10.22		
90% Chebyshev(Mean, Sd) UCL	12.75	95% Chebyshev(Mean, Sd) UCL	15.54
97.5% Chebyshev(Mean, Sd) UCL	19.4	99% Chebyshev(Mean, Sd) UCL	27

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	14.67
Maximum	42	Median	7.75
SD	16.12	Std. Error of Mean	5.374
Coefficient of Variation	1.099	Skewness	1.013
Mean of logged Data	2.048	SD of logged Data	1.24

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.66	95% Adjusted-CLT UCL (Chen-1995)	25.45
		95% Modified-t UCL (Johnson-1978)	24.96

Nonparametric Distribution Free UCLs

95% CLT UCL	23.51	95% Jackknife UCL	24.66
95% Standard Bootstrap UCL	22.79	95% Bootstrap-t UCL	30.6
95% Hall's Bootstrap UCL	22.69	95% Percentile Bootstrap UCL	23.27
95% BCA Bootstrap UCL	24.98		
90% Chebyshev(Mean, Sd) UCL	30.79	95% Chebyshev(Mean, Sd) UCL	38.09
97.5% Chebyshev(Mean, Sd) UCL	48.23	99% Chebyshev(Mean, Sd) UCL	68.14

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	3.075	Mean	3.839
Maximum	6.68	Median	3.26
SD	1.184	Std. Error of Mean	0.395
Coefficient of Variation	0.308	Skewness	2.081
Mean of logged Data	1.312	SD of logged Data	0.26

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.573	95% Adjusted-CLT UCL (Chen-1995)	4.781
		95% Modified-t UCL (Johnson-1978)	4.619

Nonparametric Distribution Free UCLs

95% CLT UCL	4.488	95% Jackknife UCL	4.573
95% Standard Bootstrap UCL	4.454	95% Bootstrap-t UCL	5.394
95% Hall's Bootstrap UCL	6.217	95% Percentile Bootstrap UCL	4.499
95% BCA Bootstrap UCL	4.738		
90% Chebyshev(Mean, Sd) UCL	5.023	95% Chebyshev(Mean, Sd) UCL	5.559
97.5% Chebyshev(Mean, Sd) UCL	6.304	99% Chebyshev(Mean, Sd) UCL	7.766

Suggested UCL to Use

95% Student's-t UCL	4.573	or 95% Modified-t UCL	4.619

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2	Mean	23.11
Maximum	90.9	Median	10.3
SD	30.55	Std. Error of Mean	10.18
Coefficient of Variation	1.322	Skewness	1.685
Mean of logged Data	2.282	SD of logged Data	1.447

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.05	95% Adjusted-CLT UCL (Chen-1995)	45.97
		95% Modified-t UCL (Johnson-1978)	43

Nonparametric Distribution Free UCLs

95% CLT UCL	39.86	95% Jackknife UCL	42.05
95% Standard Bootstrap UCL	38.76	95% Bootstrap-t UCL	69.26

95% Hall's Bootstrap UCL	58.99	95% Percentile Bootstrap UCL	41.07
95% BCA Bootstrap UCL	44.4		
90% Chebyshev(Mean, Sd) UCL	53.66	95% Chebyshev(Mean, Sd) UCL	67.5
97.5% Chebyshev(Mean, Sd) UCL	86.71	99% Chebyshev(Mean, Sd) UCL	124.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.14	Mean	1.272
Maximum	1.33	Median	1.285
SD	0.0612	Std. Error of Mean	0.0204
Coefficient of Variation	0.0481	Skewness	-1.322
Mean of logged Data	0.239	SD of logged Data	0.0494

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.31	95% Adjusted-CLT UCL (Chen-1995)	1.296
		95% Modified-t UCL (Johnson-1978)	1.308

Nonparametric Distribution Free UCLs

95% CLT UCL	1.305	95% Jackknife UCL	1.31
95% Standard Bootstrap UCL	1.304	95% Bootstrap-t UCL	1.302
95% Hall's Bootstrap UCL	1.297	95% Percentile Bootstrap UCL	1.301
95% BCA Bootstrap UCL	1.297		
90% Chebyshev(Mean, Sd) UCL	1.333	95% Chebyshev(Mean, Sd) UCL	1.361
97.5% Chebyshev(Mean, Sd) UCL	1.399	99% Chebyshev(Mean, Sd) UCL	1.475

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.075	Mean	10.05
Maximum	26.3	Median	5.06
SD	9.45	Std. Error of Mean	3.15
Coefficient of Variation	0.94	Skewness	0.961
Mean of logged Data	1.92	SD of logged Data	0.91

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.91	95% Adjusted-CLT UCL (Chen-1995)	16.31
		95% Modified-t UCL (Johnson-1978)	16.08

Nonparametric Distribution Free UCLs

95% CLT UCL	15.23	95% Jackknife UCL	15.91
95% Standard Bootstrap UCL	14.97	95% Bootstrap-t UCL	17.75
95% Hall's Bootstrap UCL	13.34	95% Percentile Bootstrap UCL	15.19
95% BCA Bootstrap UCL	15.92		
90% Chebyshev(Mean, Sd) UCL	19.5	95% Chebyshev(Mean, Sd) UCL	23.78
97.5% Chebyshev(Mean, Sd) UCL	29.72	99% Chebyshev(Mean, Sd) UCL	41.39

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	23.78

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.48	Mean	2.331
Maximum	3.04	Median	2.45
SD	0.464	Std. Error of Mean	0.155
Coefficient of Variation	0.199	Skewness	-0.484
Mean of logged Data	0.827	SD of logged Data	0.215

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.619	95% Adjusted-CLT UCL (Chen-1995)	2.559
		95% Modified-t UCL (Johnson-1978)	2.615

Nonparametric Distribution Free UCLs

95% CLT UCL	2.586	95% Jackknife UCL	2.619
95% Standard Bootstrap UCL	2.565	95% Bootstrap-t UCL	2.589
95% Hall's Bootstrap UCL	2.569	95% Percentile Bootstrap UCL	2.557

95% BCA Bootstrap UCL	2.55		
90% Chebyshev(Mean, Sd) UCL	2.795	95% Chebyshev(Mean, Sd) UCL	3.005
97.5% Chebyshev(Mean, Sd) UCL	3.297	99% Chebyshev(Mean, Sd) UCL	3.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.075	Mean	11.88
Maximum	59.2	Median	3.34
SD	18.42	Std. Error of Mean	6.139
Coefficient of Variation	1.55	Skewness	2.634
Mean of logged Data	1.829	SD of logged Data	1.049

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.3	95% Adjusted-CLT UCL (Chen-1995)	27.74
		95% Modified-t UCL (Johnson-1978)	24.19

Nonparametric Distribution Free UCLs

95% CLT UCL	21.98	95% Jackknife UCL	23.3
95% Standard Bootstrap UCL	21.28	95% Bootstrap-t UCL	73.23
95% Hall's Bootstrap UCL	78.4	95% Percentile Bootstrap UCL	23.47
95% BCA Bootstrap UCL	28.29		
90% Chebyshev(Mean, Sd) UCL	30.3	95% Chebyshev(Mean, Sd) UCL	38.64
97.5% Chebyshev(Mean, Sd) UCL	50.22	99% Chebyshev(Mean, Sd) UCL	72.96

Suggested UCL to Use

95% Hall's Bootstrap UCL 78.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.075	Mean	22.51
Maximum	80.8	Median	10.5
SD	27.52	Std. Error of Mean	9.172
Coefficient of Variation	1.222	Skewness	1.513
Mean of logged Data	2.424	SD of logged Data	1.257

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.57	95% Adjusted-CLT UCL (Chen-1995)	42.55
		95% Modified-t UCL (Johnson-1978)	40.34

Nonparametric Distribution Free UCLs

95% CLT UCL	37.6	95% Jackknife UCL	39.57
95% Standard Bootstrap UCL	36.68	95% Bootstrap-t UCL	61.2
95% Hall's Bootstrap UCL	46.09	95% Percentile Bootstrap UCL	38.19
95% BCA Bootstrap UCL	42.57		
90% Chebyshev(Mean, Sd) UCL	50.03	95% Chebyshev(Mean, Sd) UCL	62.5
97.5% Chebyshev(Mean, Sd) UCL	79.8	99% Chebyshev(Mean, Sd) UCL	113.8

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 11:58:59 AM
From File	05166A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.2	Mean	32.63
Maximum	88.7	Median	12.5
SD	28.99	Std. Error of Mean	9.662
Coefficient of Variation	0.888	Skewness	1.264
Mean of logged Data	3.165	SD of logged Data	0.824

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	50.59	95% Adjusted-CLT UCL (Chen-1995)	52.87
		95% Modified-t UCL (Johnson-1978)	51.27

Nonparametric Distribution Free UCLs

95% CLT UCL	48.52	95% Jackknife UCL	50.59
95% Standard Bootstrap UCL	48.09	95% Bootstrap-t UCL	73.54
95% Hall's Bootstrap UCL	66.84	95% Percentile Bootstrap UCL	48.74
95% BCA Bootstrap UCL	51.09		
90% Chebyshev(Mean, Sd) UCL	61.61	95% Chebyshev(Mean, Sd) UCL	74.74
97.5% Chebyshev(Mean, Sd) UCL	92.97	99% Chebyshev(Mean, Sd) UCL	128.8

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	74.74

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.69	Mean	13.59
Maximum	15.3	Median	13.6
SD	1.706	Std. Error of Mean	0.569
Coefficient of Variation	0.126	Skewness	-1.568
Mean of logged Data	2.601	SD of logged Data	0.139

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.65	95% Adjusted-CLT UCL (Chen-1995)	14.21
		95% Modified-t UCL (Johnson-1978)	14.6

Nonparametric Distribution Free UCLs

95% CLT UCL	14.52	95% Jackknife UCL	14.65
95% Standard Bootstrap UCL	14.47	95% Bootstrap-t UCL	14.43
95% Hall's Bootstrap UCL	14.32	95% Percentile Bootstrap UCL	14.4
95% BCA Bootstrap UCL	14.24		
90% Chebyshev(Mean, Sd) UCL	15.29	95% Chebyshev(Mean, Sd) UCL	16.07
97.5% Chebyshev(Mean, Sd) UCL	17.14	99% Chebyshev(Mean, Sd) UCL	19.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.7	Mean	79.18
Maximum	96.9	Median	78.4
SD	15.59	Std. Error of Mean	5.198
Coefficient of Variation	0.197	Skewness	-1.111
Mean of logged Data	4.351	SD of logged Data	0.227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	88.84	95% Adjusted-CLT UCL (Chen-1995)	85.67
		95% Modified-t UCL (Johnson-1978)	88.52

Nonparametric Distribution Free UCLs

95% CLT UCL	87.73	95% Jackknife UCL	88.84
95% Standard Bootstrap UCL	87.15	95% Bootstrap-t UCL	87.28
95% Hall's Bootstrap UCL	86.93	95% Percentile Bootstrap UCL	86.83
95% BCA Bootstrap UCL	85.17		
90% Chebyshev(Mean, Sd) UCL	94.77	95% Chebyshev(Mean, Sd) UCL	101.8
97.5% Chebyshev(Mean, Sd) UCL	111.6	99% Chebyshev(Mean, Sd) UCL	130.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.895	Mean	1.62
Maximum	1.98	Median	1.86
SD	0.461	Std. Error of Mean	0.154
Coefficient of Variation	0.285	Skewness	-0.979
Mean of logged Data	0.438	SD of logged Data	0.334

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.905	95% Adjusted-CLT UCL (Chen-1995)	1.819
		95% Modified-t UCL (Johnson-1978)	1.897

Nonparametric Distribution Free UCLs

95% CLT UCL	1.872	95% Jackknife UCL	1.905
95% Standard Bootstrap UCL	1.862	95% Bootstrap-t UCL	1.857
95% Hall's Bootstrap UCL	1.805	95% Percentile Bootstrap UCL	1.84
95% BCA Bootstrap UCL	1.829		
90% Chebyshev(Mean, Sd) UCL	2.081	95% Chebyshev(Mean, Sd) UCL	2.289
97.5% Chebyshev(Mean, Sd) UCL	2.579	99% Chebyshev(Mean, Sd) UCL	3.148

Suggested UCL to Use

95% Student's-t UCL	1.905	or 95% Modified-t UCL	1.897

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.46	Mean	0.504
Maximum	0.53	Median	0.51

SD	0.0235	Std. Error of Mean	0.00783
Coefficient of Variation	0.0466	Skewness	-0.798
Mean of logged Data	-0.687	SD of logged Data	0.0474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.518	95% Adjusted-CLT UCL (Chen-1995)	0.514
		95% Modified-t UCL (Johnson-1978)	0.518

Nonparametric Distribution Free UCLs

95% CLT UCL	0.517	95% Jackknife UCL	0.518
95% Standard Bootstrap UCL	0.516	95% Bootstrap-t UCL	0.516
95% Hall's Bootstrap UCL	0.514	95% Percentile Bootstrap UCL	0.516
95% BCA Bootstrap UCL	0.514		
90% Chebyshev(Mean, Sd) UCL	0.527	95% Chebyshev(Mean, Sd) UCL	0.538
97.5% Chebyshev(Mean, Sd) UCL	0.553	99% Chebyshev(Mean, Sd) UCL	0.582

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.945	Mean	2.068
Maximum	2.15	Median	2.075
SD	0.0682	Std. Error of Mean	0.0227
Coefficient of Variation	0.033	Skewness	-0.634
Mean of logged Data	0.726	SD of logged Data	0.0333

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.111	95% Adjusted-CLT UCL (Chen-1995)	2.101
		95% Modified-t UCL (Johnson-1978)	2.11

Nonparametric Distribution Free UCLs

95% CLT UCL	2.106	95% Jackknife UCL	2.111
95% Standard Bootstrap UCL	2.104	95% Bootstrap-t UCL	2.104

95% Hall's Bootstrap UCL	2.1	95% Percentile Bootstrap UCL	2.103
95% BCA Bootstrap UCL	2.099		
90% Chebyshev(Mean, Sd) UCL	2.137	95% Chebyshev(Mean, Sd) UCL	2.167
97.5% Chebyshev(Mean, Sd) UCL	2.21	99% Chebyshev(Mean, Sd) UCL	2.295

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	3.083
Maximum	6.1	Median	2.135
SD	1.592	Std. Error of Mean	0.531
Coefficient of Variation	0.516	Skewness	1.227
Mean of logged Data	1.025	SD of logged Data	0.453

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.07	95% Adjusted-CLT UCL (Chen-1995)	4.188
		95% Modified-t UCL (Johnson-1978)	4.106

Nonparametric Distribution Free UCLs

95% CLT UCL	3.956	95% Jackknife UCL	4.07
95% Standard Bootstrap UCL	3.898	95% Bootstrap-t UCL	4.978
95% Hall's Bootstrap UCL	3.969	95% Percentile Bootstrap UCL	3.976
95% BCA Bootstrap UCL	4.083		
90% Chebyshev(Mean, Sd) UCL	4.675	95% Chebyshev(Mean, Sd) UCL	5.396
97.5% Chebyshev(Mean, Sd) UCL	6.397	99% Chebyshev(Mean, Sd) UCL	8.362

Suggested UCL to Use

95% Student's-t UCL	4.07	or 95% Modified-t UCL	4.106

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	1.41	Mean	3.732
Maximum	8.77	Median	2.105
SD	2.879	Std. Error of Mean	0.96
Coefficient of Variation	0.772	Skewness	1.043
Mean of logged Data	1.077	SD of logged Data	0.708

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.517	95% Adjusted-CLT UCL (Chen-1995)	5.668
		95% Modified-t UCL (Johnson-1978)	5.573

Nonparametric Distribution Free UCLs

95% CLT UCL	5.311	95% Jackknife UCL	5.517
95% Standard Bootstrap UCL	5.219	95% Bootstrap-t UCL	6.575
95% Hall's Bootstrap UCL	4.835	95% Percentile Bootstrap UCL	5.234
95% BCA Bootstrap UCL	5.567		
90% Chebyshev(Mean, Sd) UCL	6.612	95% Chebyshev(Mean, Sd) UCL	7.916
97.5% Chebyshev(Mean, Sd) UCL	9.726	99% Chebyshev(Mean, Sd) UCL	13.28

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.916

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	6.266
Maximum	13	Median	3.285
SD	4.626	Std. Error of Mean	1.542
Coefficient of Variation	0.738	Skewness	0.895
Mean of logged Data	1.614	SD of logged Data	0.678

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.133	95% Adjusted-CLT UCL (Chen-1995)	9.294
		95% Modified-t UCL (Johnson-1978)	9.21

Nonparametric Distribution Free UCLs

95% CLT UCL	8.802	95% Jackknife UCL	9.133
95% Standard Bootstrap UCL	8.671	95% Bootstrap-t UCL	9.983
95% Hall's Bootstrap UCL	7.757	95% Percentile Bootstrap UCL	8.616

95% BCA Bootstrap UCL	9.14		
90% Chebyshev(Mean, Sd) UCL	10.89	95% Chebyshev(Mean, Sd) UCL	12.99
97.5% Chebyshev(Mean, Sd) UCL	15.9	99% Chebyshev(Mean, Sd) UCL	21.61

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.99

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	4.254
Maximum	6.6	Median	3.285
SD	1.589	Std. Error of Mean	0.53
Coefficient of Variation	0.373	Skewness	0.872
Mean of logged Data	1.392	SD of logged Data	0.345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.239	95% Adjusted-CLT UCL (Chen-1995)	5.29
		95% Modified-t UCL (Johnson-1978)	5.264

Nonparametric Distribution Free UCLs

95% CLT UCL	5.125	95% Jackknife UCL	5.239
95% Standard Bootstrap UCL	5.068	95% Bootstrap-t UCL	5.424
95% Hall's Bootstrap UCL	4.766	95% Percentile Bootstrap UCL	5.088
95% BCA Bootstrap UCL	5.256		
90% Chebyshev(Mean, Sd) UCL	5.843	95% Chebyshev(Mean, Sd) UCL	6.562
97.5% Chebyshev(Mean, Sd) UCL	7.561	99% Chebyshev(Mean, Sd) UCL	9.523

Suggested UCL to Use

95% Student's-t UCL	5.239	or 95% Modified-t UCL	5.264

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	2.992
Maximum	5.12	Median	2.135
SD	1.383	Std. Error of Mean	0.461
Coefficient of Variation	0.462	Skewness	0.922

Mean of logged Data	1.011	SD of logged Data	0.422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.849	95% Adjusted-CLT UCL (Chen-1995)	3.901
		95% Modified-t UCL (Johnson-1978)	3.872

Nonparametric Distribution Free UCLs

95% CLT UCL	3.75	95% Jackknife UCL	3.849
95% Standard Bootstrap UCL	3.696	95% Bootstrap-t UCL	4.152
95% Hall's Bootstrap UCL	3.449	95% Percentile Bootstrap UCL	3.674
95% BCA Bootstrap UCL	3.817		
90% Chebyshev(Mean, Sd) UCL	4.374	95% Chebyshev(Mean, Sd) UCL	5.001
97.5% Chebyshev(Mean, Sd) UCL	5.87	99% Chebyshev(Mean, Sd) UCL	7.578

Suggested UCL to Use

95% Student's-t UCL	3.849	or 95% Modified-t UCL	3.872

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.92	Mean	4.243
Maximum	9.6	Median	2.105
SD	3.341	Std. Error of Mean	1.114
Coefficient of Variation	0.788	Skewness	0.94
Mean of logged Data	1.193	SD of logged Data	0.723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.314	95% Adjusted-CLT UCL (Chen-1995)	6.448
		95% Modified-t UCL (Johnson-1978)	6.372

Nonparametric Distribution Free UCLs

95% CLT UCL	6.075	95% Jackknife UCL	6.314
95% Standard Bootstrap UCL	5.993	95% Bootstrap-t UCL	7.081
95% Hall's Bootstrap UCL	5.36	95% Percentile Bootstrap UCL	5.971
95% BCA Bootstrap UCL	6.312		
90% Chebyshev(Mean, Sd) UCL	7.584	95% Chebyshev(Mean, Sd) UCL	9.098
97.5% Chebyshev(Mean, Sd) UCL	11.2	99% Chebyshev(Mean, Sd) UCL	15.32

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.098

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.99	Mean	3.182
Maximum	3.305	Median	3.195
SD	0.105	Std. Error of Mean	0.0352
Coefficient of Variation	0.0331	Skewness	-0.674
Mean of logged Data	1.157	SD of logged Data	0.0335

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.248	95% Adjusted-CLT UCL (Chen-1995)	3.232
		95% Modified-t UCL (Johnson-1978)	3.246

Nonparametric Distribution Free UCLs

95% CLT UCL	3.24	95% Jackknife UCL	3.248
95% Standard Bootstrap UCL	3.236	95% Bootstrap-t UCL	3.242
95% Hall's Bootstrap UCL	3.231	95% Percentile Bootstrap UCL	3.234
95% BCA Bootstrap UCL	3.232		
90% Chebyshev(Mean, Sd) UCL	3.288	95% Chebyshev(Mean, Sd) UCL	3.335
97.5% Chebyshev(Mean, Sd) UCL	3.402	99% Chebyshev(Mean, Sd) UCL	3.532

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	5.175
Maximum	13.8	Median	2.36
SD	4.62	Std. Error of Mean	1.54
Coefficient of Variation	0.893	Skewness	1.126
Mean of logged Data	1.322	SD of logged Data	0.814

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.038	95% Adjusted-CLT UCL (Chen-1995)	8.325
		95% Modified-t UCL (Johnson-1978)	8.135

Nonparametric Distribution Free UCLs

95% CLT UCL	7.708	95% Jackknife UCL	8.038
95% Standard Bootstrap UCL	7.502	95% Bootstrap-t UCL	9.634
95% Hall's Bootstrap UCL	6.838	95% Percentile Bootstrap UCL	7.729
95% BCA Bootstrap UCL	7.97		
90% Chebyshev(Mean, Sd) UCL	9.795	95% Chebyshev(Mean, Sd) UCL	11.89
97.5% Chebyshev(Mean, Sd) UCL	14.79	99% Chebyshev(Mean, Sd) UCL	20.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.89

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.195	Mean	1.27
Maximum	1.325	Median	1.27
SD	0.0434	Std. Error of Mean	0.0145
Coefficient of Variation	0.0342	Skewness	-0.362
Mean of logged Data	0.238	SD of logged Data	0.0343

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.297	95% Adjusted-CLT UCL (Chen-1995)	1.292
		95% Modified-t UCL (Johnson-1978)	1.297

Nonparametric Distribution Free UCLs

95% CLT UCL	1.294	95% Jackknife UCL	1.297
95% Standard Bootstrap UCL	1.292	95% Bootstrap-t UCL	1.294
95% Hall's Bootstrap UCL	1.291	95% Percentile Bootstrap UCL	1.292
95% BCA Bootstrap UCL	1.291		
90% Chebyshev(Mean, Sd) UCL	1.313	95% Chebyshev(Mean, Sd) UCL	1.333
97.5% Chebyshev(Mean, Sd) UCL	1.36	99% Chebyshev(Mean, Sd) UCL	1.414

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	4.547
Maximum	7.5	Median	3.285
SD	2.028	Std. Error of Mean	0.676
Coefficient of Variation	0.446	Skewness	0.868
Mean of logged Data	1.435	SD of logged Data	0.41

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.804	95% Adjusted-CLT UCL (Chen-1995)	5.868
		95% Modified-t UCL (Johnson-1978)	5.837

Nonparametric Distribution Free UCLs

95% CLT UCL	5.659	95% Jackknife UCL	5.804
95% Standard Bootstrap UCL	5.568	95% Bootstrap-t UCL	6.019
95% Hall's Bootstrap UCL	5.192	95% Percentile Bootstrap UCL	5.773
95% BCA Bootstrap UCL	5.762		
90% Chebyshev(Mean, Sd) UCL	6.575	95% Chebyshev(Mean, Sd) UCL	7.493
97.5% Chebyshev(Mean, Sd) UCL	8.768	99% Chebyshev(Mean, Sd) UCL	11.27

Suggested UCL to Use

95% Student's-t UCL	5.804	or 95% Modified-t UCL	5.837

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.925	Mean	1.272
Maximum	2.19	Median	0.985
SD	0.486	Std. Error of Mean	0.162
Coefficient of Variation	0.382	Skewness	1.128
Mean of logged Data	0.183	SD of logged Data	0.345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.573	95% Adjusted-CLT UCL (Chen-1995)	1.603
		95% Modified-t UCL (Johnson-1978)	1.583

Nonparametric Distribution Free UCLs

95% CLT UCL	1.538	95% Jackknife UCL	1.573
95% Standard Bootstrap UCL	1.527	95% Bootstrap-t UCL	1.689
95% Hall's Bootstrap UCL	1.449	95% Percentile Bootstrap UCL	1.543
95% BCA Bootstrap UCL	1.587		
90% Chebyshev(Mean, Sd) UCL	1.758	95% Chebyshev(Mean, Sd) UCL	1.978
97.5% Chebyshev(Mean, Sd) UCL	2.284	99% Chebyshev(Mean, Sd) UCL	2.884

Suggested UCL to Use

95% Student's-t UCL	1.573	or 95% Modified-t UCL	1.583

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	3.762
Maximum	5.67	Median	3.285
SD	0.975	Std. Error of Mean	0.325
Coefficient of Variation	0.259	Skewness	1.504
Mean of logged Data	1.299	SD of logged Data	0.231

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.366	95% Adjusted-CLT UCL (Chen-1995)	4.47
		95% Modified-t UCL (Johnson-1978)	4.393

Nonparametric Distribution Free UCLs

95% CLT UCL	4.296	95% Jackknife UCL	4.366
95% Standard Bootstrap UCL	4.264	95% Bootstrap-t UCL	5.968
95% Hall's Bootstrap UCL	6.644	95% Percentile Bootstrap UCL	4.288
95% BCA Bootstrap UCL	4.413		
90% Chebyshev(Mean, Sd) UCL	4.736	95% Chebyshev(Mean, Sd) UCL	5.178
97.5% Chebyshev(Mean, Sd) UCL	5.79	99% Chebyshev(Mean, Sd) UCL	6.994

Suggested UCL to Use

95% Student's-t UCL	4.366	or 95% Modified-t UCL	4.393

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	5.258
Maximum	12.2	Median	3.285
SD	3.331	Std. Error of Mean	1.11
Coefficient of Variation	0.633	Skewness	1.413
Mean of logged Data	1.514	SD of logged Data	0.542

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.323	95% Adjusted-CLT UCL (Chen-1995)	7.644
		95% Modified-t UCL (Johnson-1978)	7.41

Nonparametric Distribution Free UCLs

95% CLT UCL	7.085	95% Jackknife UCL	7.323
95% Standard Bootstrap UCL	7.01	95% Bootstrap-t UCL	8.907
95% Hall's Bootstrap UCL	7.034	95% Percentile Bootstrap UCL	7.081
95% BCA Bootstrap UCL	7.686		
90% Chebyshev(Mean, Sd) UCL	8.589	95% Chebyshev(Mean, Sd) UCL	10.1
97.5% Chebyshev(Mean, Sd) UCL	12.19	99% Chebyshev(Mean, Sd) UCL	16.31

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:24:37 PM
From File	05263A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	15.1	Mean	16.07
Maximum	18.5	Median	15.6
SD	1.126	Std. Error of Mean	0.375
Coefficient of Variation	0.0701	Skewness	1.38
Mean of logged Data	2.775	SD of logged Data	0.0678

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.76	95% Adjusted-CLT UCL (Chen-1995)	16.87
		95% Modified-t UCL (Johnson-1978)	16.79

Nonparametric Distribution Free UCLs

95% CLT UCL	16.68	95% Jackknife UCL	16.76
95% Standard Bootstrap UCL	16.64	95% Bootstrap-t UCL	17.14
95% Hall's Bootstrap UCL	17.03	95% Percentile Bootstrap UCL	16.71
95% BCA Bootstrap UCL	16.78		
90% Chebyshev(Mean, Sd) UCL	17.19	95% Chebyshev(Mean, Sd) UCL	17.7
97.5% Chebyshev(Mean, Sd) UCL	18.41	99% Chebyshev(Mean, Sd) UCL	19.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.1	Mean	14.62
Maximum	20.6	Median	13.6
SD	3.442	Std. Error of Mean	1.147
Coefficient of Variation	0.235	Skewness	0.722
Mean of logged Data	2.659	SD of logged Data	0.227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.76	95% Adjusted-CLT UCL (Chen-1995)	16.8
		95% Modified-t UCL (Johnson-1978)	16.8

Nonparametric Distribution Free UCLs

95% CLT UCL	16.51	95% Jackknife UCL	16.76
95% Standard Bootstrap UCL	16.45	95% Bootstrap-t UCL	17.2
95% Hall's Bootstrap UCL	16.52	95% Percentile Bootstrap UCL	16.33
95% BCA Bootstrap UCL	16.53		
90% Chebyshev(Mean, Sd) UCL	18.06	95% Chebyshev(Mean, Sd) UCL	19.62
97.5% Chebyshev(Mean, Sd) UCL	21.79	99% Chebyshev(Mean, Sd) UCL	26.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	53.2	Mean	69.3
Maximum	96.3	Median	59.9
SD	18.21	Std. Error of Mean	6.07
Coefficient of Variation	0.263	Skewness	0.829
Mean of logged Data	4.21	SD of logged Data	0.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	80.59	95% Adjusted-CLT UCL (Chen-1995)	81.08
		95% Modified-t UCL (Johnson-1978)	80.87

Nonparametric Distribution Free UCLs

95% CLT UCL	79.28	95% Jackknife UCL	80.59
95% Standard Bootstrap UCL	78.63	95% Bootstrap-t UCL	83.31
95% Hall's Bootstrap UCL	76.46	95% Percentile Bootstrap UCL	80.02
95% BCA Bootstrap UCL	79.7		
90% Chebyshev(Mean, Sd) UCL	87.51	95% Chebyshev(Mean, Sd) UCL	95.76
97.5% Chebyshev(Mean, Sd) UCL	107.2	99% Chebyshev(Mean, Sd) UCL	129.7

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	7.55	Mean	12.11
Maximum	38.9	Median	9.57
SD	10.1	Std. Error of Mean	3.367
Coefficient of Variation	0.834	Skewness	2.939
Mean of logged Data	2.33	SD of logged Data	0.513

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.37	95% Adjusted-CLT UCL (Chen-1995)	21.17
		95% Modified-t UCL (Johnson-1978)	18.92

Nonparametric Distribution Free UCLs

95% CLT UCL	17.65	95% Jackknife UCL	18.37
95% Standard Bootstrap UCL	17.22	95% Bootstrap-t UCL	48.4
95% Hall's Bootstrap UCL	49.08	95% Percentile Bootstrap UCL	18.66
95% BCA Bootstrap UCL	22.06		
90% Chebyshev(Mean, Sd) UCL	22.21	95% Chebyshev(Mean, Sd) UCL	26.79
97.5% Chebyshev(Mean, Sd) UCL	33.14	99% Chebyshev(Mean, Sd) UCL	45.61

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	26.79

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.51	Mean	1.801
Maximum	5.82	Median	2.015
SD	1.696	Std. Error of Mean	0.565
Coefficient of Variation	0.941	Skewness	1.867
Mean of logged Data	0.231	SD of logged Data	0.897

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.852	95% Adjusted-CLT UCL (Chen-1995)	3.107
		95% Modified-t UCL (Johnson-1978)	2.911

Nonparametric Distribution Free UCLs

95% CLT UCL	2.731	95% Jackknife UCL	2.852
95% Standard Bootstrap UCL	2.67	95% Bootstrap-t UCL	3.495
95% Hall's Bootstrap UCL	6.497	95% Percentile Bootstrap UCL	2.804
95% BCA Bootstrap UCL	3.057		
90% Chebyshev(Mean, Sd) UCL	3.497	95% Chebyshev(Mean, Sd) UCL	4.265
97.5% Chebyshev(Mean, Sd) UCL	5.331	99% Chebyshev(Mean, Sd) UCL	7.424

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.075	Mean	5.705
Maximum	11.9	Median	5.66
SD	3.745	Std. Error of Mean	1.248
Coefficient of Variation	0.656	Skewness	0.353
Mean of logged Data	1.513	SD of logged Data	0.745

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.026	95% Adjusted-CLT UCL (Chen-1995)	7.915
		95% Modified-t UCL (Johnson-1978)	8.051

Nonparametric Distribution Free UCLs

95% CLT UCL	7.758	95% Jackknife UCL	8.026
95% Standard Bootstrap UCL	7.673	95% Bootstrap-t UCL	8.239
95% Hall's Bootstrap UCL	7.53	95% Percentile Bootstrap UCL	7.774
95% BCA Bootstrap UCL	7.809		
90% Chebyshev(Mean, Sd) UCL	9.45	95% Chebyshev(Mean, Sd) UCL	11.15
97.5% Chebyshev(Mean, Sd) UCL	13.5	99% Chebyshev(Mean, Sd) UCL	18.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.075	Mean	10.98
Maximum	41.2	Median	8.45
SD	12.51	Std. Error of Mean	4.169
Coefficient of Variation	1.14	Skewness	2.046
Mean of logged Data	1.859	SD of logged Data	1.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.73	95% Adjusted-CLT UCL (Chen-1995)	20.87
		95% Modified-t UCL (Johnson-1978)	19.2

Nonparametric Distribution Free UCLs

95% CLT UCL	17.83	95% Jackknife UCL	18.73
95% Standard Bootstrap UCL	17.33	95% Bootstrap-t UCL	25.53
95% Hall's Bootstrap UCL	44.22	95% Percentile Bootstrap UCL	18.38
95% BCA Bootstrap UCL	20.47		
90% Chebyshev(Mean, Sd) UCL	23.48	95% Chebyshev(Mean, Sd) UCL	29.15
97.5% Chebyshev(Mean, Sd) UCL	37.01	99% Chebyshev(Mean, Sd) UCL	52.45

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.075	Mean	10.3
Maximum	33.6	Median	8.45
SD	10.27	Std. Error of Mean	3.425
Coefficient of Variation	0.998	Skewness	1.587
Mean of logged Data	1.863	SD of logged Data	1.064

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	16.67	95% Adjusted-CLT UCL (Chen-1995)	17.87
		95% Modified-t UCL (Johnson-1978)	16.97

Nonparametric Distribution Free UCLs

95% CLT UCL	15.93	95% Jackknife UCL	16.67
95% Standard Bootstrap UCL	15.67	95% Bootstrap-t UCL	20.22
95% Hall's Bootstrap UCL	34.97	95% Percentile Bootstrap UCL	15.91
95% BCA Bootstrap UCL	17.36		
90% Chebyshev(Mean, Sd) UCL	20.57	95% Chebyshev(Mean, Sd) UCL	25.23
97.5% Chebyshev(Mean, Sd) UCL	31.69	99% Chebyshev(Mean, Sd) UCL	44.37

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.19	Mean	23.32
Maximum	55.6	Median	13
SD	22.01	Std. Error of Mean	7.338
Coefficient of Variation	0.944	Skewness	0.461
Mean of logged Data	2.554	SD of logged Data	1.262

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.97	95% Adjusted-CLT UCL (Chen-1995)	36.59
		95% Modified-t UCL (Johnson-1978)	37.15

Nonparametric Distribution Free UCLs

95% CLT UCL	35.39	95% Jackknife UCL	36.97
95% Standard Bootstrap UCL	34.73	95% Bootstrap-t UCL	39.6
95% Hall's Bootstrap UCL	32.49	95% Percentile Bootstrap UCL	34.72
95% BCA Bootstrap UCL	35.95		
90% Chebyshev(Mean, Sd) UCL	45.33	95% Chebyshev(Mean, Sd) UCL	55.31
97.5% Chebyshev(Mean, Sd) UCL	69.15	99% Chebyshev(Mean, Sd) UCL	96.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.08	Mean	20.62
Maximum	56.1	Median	13
SD	19.72	Std. Error of Mean	6.574
Coefficient of Variation	0.957	Skewness	0.656
Mean of logged Data	2.431	SD of logged Data	1.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.84	95% Adjusted-CLT UCL (Chen-1995)	32.96
		95% Modified-t UCL (Johnson-1978)	33.08

Nonparametric Distribution Free UCLs

95% CLT UCL	31.43	95% Jackknife UCL	32.84
95% Standard Bootstrap UCL	31.14	95% Bootstrap-t UCL	35.07
95% Hall's Bootstrap UCL	30.88	95% Percentile Bootstrap UCL	31.1
95% BCA Bootstrap UCL	31.28		
90% Chebyshev(Mean, Sd) UCL	40.34	95% Chebyshev(Mean, Sd) UCL	49.27
97.5% Chebyshev(Mean, Sd) UCL	61.67	99% Chebyshev(Mean, Sd) UCL	86.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	8.696
Maximum	22.5	Median	8.45
SD	7.359	Std. Error of Mean	2.453
Coefficient of Variation	0.846	Skewness	0.773
Mean of logged Data	1.763	SD of logged Data	1.003

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.26	95% Adjusted-CLT UCL (Chen-1995)	13.41
		95% Modified-t UCL (Johnson-1978)	13.36

Nonparametric Distribution Free UCLs

95% CLT UCL	12.73	95% Jackknife UCL	13.26
95% Standard Bootstrap UCL	12.52	95% Bootstrap-t UCL	14.29
95% Hall's Bootstrap UCL	13.75	95% Percentile Bootstrap UCL	12.52
95% BCA Bootstrap UCL	12.97		
90% Chebyshev(Mean, Sd) UCL	16.05	95% Chebyshev(Mean, Sd) UCL	19.39
97.5% Chebyshev(Mean, Sd) UCL	24.01	99% Chebyshev(Mean, Sd) UCL	33.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.075	Mean	20.62
Maximum	45.8	Median	8.45
SD	20	Std. Error of Mean	6.666
Coefficient of Variation	0.97	Skewness	0.293
Mean of logged Data	2.321	SD of logged Data	1.405

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.01	95% Adjusted-CLT UCL (Chen-1995)	32.28
		95% Modified-t UCL (Johnson-1978)	33.12

Nonparametric Distribution Free UCLs

95% CLT UCL	31.58	95% Jackknife UCL	33.01
95% Standard Bootstrap UCL	30.88	95% Bootstrap-t UCL	33.81
95% Hall's Bootstrap UCL	28.12	95% Percentile Bootstrap UCL	31.17
95% BCA Bootstrap UCL	31.83		
90% Chebyshev(Mean, Sd) UCL	40.62	95% Chebyshev(Mean, Sd) UCL	49.67
97.5% Chebyshev(Mean, Sd) UCL	62.25	99% Chebyshev(Mean, Sd) UCL	86.94

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.19	Mean	8.617

Maximum	13.3	Median	12.6
SD	5.083	Std. Error of Mean	1.694
Coefficient of Variation	0.59	Skewness	-0.265
Mean of logged Data	1.946	SD of logged Data	0.725

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.77	95% Adjusted-CLT UCL (Chen-1995)	11.24
		95% Modified-t UCL (Johnson-1978)	11.74

Nonparametric Distribution Free UCLs

95% CLT UCL	11.4	95% Jackknife UCL	11.77
95% Standard Bootstrap UCL	11.2	95% Bootstrap-t UCL	11.06
95% Hall's Bootstrap UCL	10.51	95% Percentile Bootstrap UCL	10.9
95% BCA Bootstrap UCL	10.85		
90% Chebyshev(Mean, Sd) UCL	13.7	95% Chebyshev(Mean, Sd) UCL	16
97.5% Chebyshev(Mean, Sd) UCL	19.2	99% Chebyshev(Mean, Sd) UCL	25.48

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 16

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.075	Mean	22.74
Maximum	93.7	Median	8.45
SD	29.94	Std. Error of Mean	9.98
Coefficient of Variation	1.317	Skewness	1.928
Mean of logged Data	2.232	SD of logged Data	1.51

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.3	95% Adjusted-CLT UCL (Chen-1995)	46.01
		95% Modified-t UCL (Johnson-1978)	42.36

Nonparametric Distribution Free UCLs

95% CLT UCL	39.15	95% Jackknife UCL	41.3
95% Standard Bootstrap UCL	38.46	95% Bootstrap-t UCL	56.1
95% Hall's Bootstrap UCL	96.09	95% Percentile Bootstrap UCL	39.75
95% BCA Bootstrap UCL	45.69		
90% Chebyshev(Mean, Sd) UCL	52.68	95% Chebyshev(Mean, Sd) UCL	66.24
97.5% Chebyshev(Mean, Sd) UCL	85.06	99% Chebyshev(Mean, Sd) UCL	122

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.275	Mean	3.569
Maximum	6.15	Median	5.05
SD	2.17	Std. Error of Mean	0.723
Coefficient of Variation	0.608	Skewness	-0.19
Mean of logged Data	1.052	SD of logged Data	0.747

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.914	95% Adjusted-CLT UCL (Chen-1995)	4.71
		95% Modified-t UCL (Johnson-1978)	4.906

Nonparametric Distribution Free UCLs

95% CLT UCL	4.759	95% Jackknife UCL	4.914
95% Standard Bootstrap UCL	4.692	95% Bootstrap-t UCL	4.708
95% Hall's Bootstrap UCL	4.443	95% Percentile Bootstrap UCL	4.671
95% BCA Bootstrap UCL	4.633		
90% Chebyshev(Mean, Sd) UCL	5.739	95% Chebyshev(Mean, Sd) UCL	6.722
97.5% Chebyshev(Mean, Sd) UCL	8.086	99% Chebyshev(Mean, Sd) UCL	10.77

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 6.722

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.68	Mean	13.42
Maximum	29.3	Median	13
SD	10.83	Std. Error of Mean	3.609
Coefficient of Variation	0.807	Skewness	0.333
Mean of logged Data	2.189	SD of logged Data	1.031

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.13	95% Adjusted-CLT UCL (Chen-1995)	19.78
		95% Modified-t UCL (Johnson-1978)	20.19

Nonparametric Distribution Free UCLs

95% CLT UCL	19.35	95% Jackknife UCL	20.13
95% Standard Bootstrap UCL	18.81	95% Bootstrap-t UCL	20.33
95% Hall's Bootstrap UCL	18.96	95% Percentile Bootstrap UCL	18.97
95% BCA Bootstrap UCL	19.58		
90% Chebyshev(Mean, Sd) UCL	24.24	95% Chebyshev(Mean, Sd) UCL	29.15
97.5% Chebyshev(Mean, Sd) UCL	35.95	99% Chebyshev(Mean, Sd) UCL	49.32

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.71	Mean	5.367
Maximum	7.8	Median	4.92
SD	1.389	Std. Error of Mean	0.463
Coefficient of Variation	0.259	Skewness	0.721
Mean of logged Data	1.652	SD of logged Data	0.251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.228	95% Adjusted-CLT UCL (Chen-1995)	6.247
		95% Modified-t UCL (Johnson-1978)	6.246

Nonparametric Distribution Free UCLs

95% CLT UCL	6.128	95% Jackknife UCL	6.228
95% Standard Bootstrap UCL	6.091	95% Bootstrap-t UCL	6.634
95% Hall's Bootstrap UCL	6.393	95% Percentile Bootstrap UCL	6.109
95% BCA Bootstrap UCL	6.159		
90% Chebyshev(Mean, Sd) UCL	6.756	95% Chebyshev(Mean, Sd) UCL	7.385
97.5% Chebyshev(Mean, Sd) UCL	8.258	99% Chebyshev(Mean, Sd) UCL	9.974

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.17	Mean	14.64
Maximum	65.7	Median	12.6
SD	19.87	Std. Error of Mean	6.624
Coefficient of Variation	1.358	Skewness	2.597
Mean of logged Data	2.101	SD of logged Data	1.099

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.95	95% Adjusted-CLT UCL (Chen-1995)	31.66
		95% Modified-t UCL (Johnson-1978)	27.91

Nonparametric Distribution Free UCLs

95% CLT UCL	25.53	95% Jackknife UCL	26.95
95% Standard Bootstrap UCL	24.81	95% Bootstrap-t UCL	45.96
95% Hall's Bootstrap UCL	67.79	95% Percentile Bootstrap UCL	26.42
95% BCA Bootstrap UCL	33		
90% Chebyshev(Mean, Sd) UCL	34.51	95% Chebyshev(Mean, Sd) UCL	43.51
97.5% Chebyshev(Mean, Sd) UCL	56	99% Chebyshev(Mean, Sd) UCL	80.54

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	3.19	Mean	21.25
Maximum	77.9	Median	13
SD	24.45	Std. Error of Mean	8.149
Coefficient of Variation	1.15	Skewness	1.76
Mean of logged Data	2.417	SD of logged Data	1.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.4	95% Adjusted-CLT UCL (Chen-1995)	39.76
		95% Modified-t UCL (Johnson-1978)	37.2

Nonparametric Distribution Free UCLs

95% CLT UCL	34.65	95% Jackknife UCL	36.4
95% Standard Bootstrap UCL	33.86	95% Bootstrap-t UCL	46.6
95% Hall's Bootstrap UCL	84.82	95% Percentile Bootstrap UCL	35.04
95% BCA Bootstrap UCL	40.05		
90% Chebyshev(Mean, Sd) UCL	45.7	95% Chebyshev(Mean, Sd) UCL	56.77
97.5% Chebyshev(Mean, Sd) UCL	72.14	99% Chebyshev(Mean, Sd) UCL	102.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:25:41 PM
From File	05265_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	15.3	Mean	16.98
Maximum	18.9	Median	16.9
SD	1.385	Std. Error of Mean	0.462
Coefficient of Variation	0.0816	Skewness	0.248
Mean of logged Data	2.829	SD of logged Data	0.0813

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.84	95% Adjusted-CLT UCL (Chen-1995)	17.78
		95% Modified-t UCL (Johnson-1978)	17.84

Nonparametric Distribution Free UCLs

95% CLT UCL	17.74	95% Jackknife UCL	17.84
95% Standard Bootstrap UCL	17.7	95% Bootstrap-t UCL	17.88
95% Hall's Bootstrap UCL	17.69	95% Percentile Bootstrap UCL	17.71
95% BCA Bootstrap UCL	17.7		
90% Chebyshev(Mean, Sd) UCL	18.36	95% Chebyshev(Mean, Sd) UCL	18.99
97.5% Chebyshev(Mean, Sd) UCL	19.86	99% Chebyshev(Mean, Sd) UCL	21.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.5	Mean	20.19
Maximum	29.1	Median	20.2
SD	6.733	Std. Error of Mean	2.244
Coefficient of Variation	0.334	Skewness	-0.0713
Mean of logged Data	2.951	SD of logged Data	0.36

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.36	95% Adjusted-CLT UCL (Chen-1995)	23.82
		95% Modified-t UCL (Johnson-1978)	24.35

Nonparametric Distribution Free UCLs

95% CLT UCL	23.88	95% Jackknife UCL	24.36
95% Standard Bootstrap UCL	23.68	95% Bootstrap-t UCL	24.23
95% Hall's Bootstrap UCL	23.39	95% Percentile Bootstrap UCL	23.59
95% BCA Bootstrap UCL	23.89		
90% Chebyshev(Mean, Sd) UCL	26.92	95% Chebyshev(Mean, Sd) UCL	29.97
97.5% Chebyshev(Mean, Sd) UCL	34.21	99% Chebyshev(Mean, Sd) UCL	42.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	55.4	Mean	78.44
Maximum	113	Median	68.6
SD	23.47	Std. Error of Mean	7.824
Coefficient of Variation	0.299	Skewness	0.604
Mean of logged Data	4.324	SD of logged Data	0.29

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	92.99	95% Adjusted-CLT UCL (Chen-1995)	93
		95% Modified-t UCL (Johnson-1978)	93.26

Nonparametric Distribution Free UCLs

95% CLT UCL	91.31	95% Jackknife UCL	92.99
95% Standard Bootstrap UCL	90.39	95% Bootstrap-t UCL	95.49
95% Hall's Bootstrap UCL	88.34	95% Percentile Bootstrap UCL	91
95% BCA Bootstrap UCL	91.64		
90% Chebyshev(Mean, Sd) UCL	101.9	95% Chebyshev(Mean, Sd) UCL	112.5
97.5% Chebyshev(Mean, Sd) UCL	127.3	99% Chebyshev(Mean, Sd) UCL	156.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.71	Mean	14.11
Maximum	39.4	Median	4.97
SD	14.95	Std. Error of Mean	4.985
Coefficient of Variation	1.06	Skewness	1.281
Mean of logged Data	2.202	SD of logged Data	0.946

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.38	95% Adjusted-CLT UCL (Chen-1995)	24.59
		95% Modified-t UCL (Johnson-1978)	23.74

Nonparametric Distribution Free UCLs

95% CLT UCL	22.31	95% Jackknife UCL	23.38
95% Standard Bootstrap UCL	21.86	95% Bootstrap-t UCL	37.43
95% Hall's Bootstrap UCL	25.29	95% Percentile Bootstrap UCL	23.28
95% BCA Bootstrap UCL	23.98		
90% Chebyshev(Mean, Sd) UCL	29.07	95% Chebyshev(Mean, Sd) UCL	35.84
97.5% Chebyshev(Mean, Sd) UCL	45.24	99% Chebyshev(Mean, Sd) UCL	63.71

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	35.84

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.319	Mean	2.478
Maximum	14.3	Median	0.53
SD	4.489	Std. Error of Mean	1.496
Coefficient of Variation	1.812	Skewness	2.861
Mean of logged Data	0.0752	SD of logged Data	1.193

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.26	95% Adjusted-CLT UCL (Chen-1995)	6.464
		95% Modified-t UCL (Johnson-1978)	5.498

Nonparametric Distribution Free UCLs

95% CLT UCL	4.939	95% Jackknife UCL	5.26
95% Standard Bootstrap UCL	4.759	95% Bootstrap-t UCL	15.47
95% Hall's Bootstrap UCL	15.04	95% Percentile Bootstrap UCL	5.392
95% BCA Bootstrap UCL	6.898		
90% Chebyshev(Mean, Sd) UCL	6.967	95% Chebyshev(Mean, Sd) UCL	9.001
97.5% Chebyshev(Mean, Sd) UCL	11.82	99% Chebyshev(Mean, Sd) UCL	17.37

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	9.392
Maximum	48.5	Median	2.16
SD	14.98	Std. Error of Mean	4.995
Coefficient of Variation	1.595	Skewness	2.766
Mean of logged Data	1.562	SD of logged Data	1.098

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.68	95% Adjusted-CLT UCL (Chen-1995)	22.53
		95% Modified-t UCL (Johnson-1978)	19.45

Nonparametric Distribution Free UCLs

95% CLT UCL	17.61	95% Jackknife UCL	18.68
95% Standard Bootstrap UCL	17.04	95% Bootstrap-t UCL	40.88
95% Hall's Bootstrap UCL	48.12	95% Percentile Bootstrap UCL	18.98
95% BCA Bootstrap UCL	23.43		
90% Chebyshev(Mean, Sd) UCL	24.38	95% Chebyshev(Mean, Sd) UCL	31.16
97.5% Chebyshev(Mean, Sd) UCL	40.58	99% Chebyshev(Mean, Sd) UCL	59.09

Suggested UCL to Use

95% Hall's Bootstrap UCL	48.12

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.12	Mean	30.21
Maximum	205	Median	7.79
SD	65.84	Std. Error of Mean	21.95
Coefficient of Variation	2.18	Skewness	2.949
Mean of logged Data	2.182	SD of logged Data	1.457

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.02	95% Adjusted-CLT UCL (Chen-1995)	89.36
		95% Modified-t UCL (Johnson-1978)	74.62

Nonparametric Distribution Free UCLs

95% CLT UCL	66.31	95% Jackknife UCL	71.02
95% Standard Bootstrap UCL	64.49	95% Bootstrap-t UCL	340.2
95% Hall's Bootstrap UCL	253.7	95% Percentile Bootstrap UCL	73.8
95% BCA Bootstrap UCL	94.66		
90% Chebyshev(Mean, Sd) UCL	96.05	95% Chebyshev(Mean, Sd) UCL	125.9
97.5% Chebyshev(Mean, Sd) UCL	167.3	99% Chebyshev(Mean, Sd) UCL	248.6

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.12	Mean	31.92
Maximum	206	Median	10.4
SD	65.73	Std. Error of Mean	21.91
Coefficient of Variation	2.059	Skewness	2.922
Mean of logged Data	2.313	SD of logged Data	1.469

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	72.66	95% Adjusted-CLT UCL (Chen-1995)	90.76
		95% Modified-t UCL (Johnson-1978)	76.22

Nonparametric Distribution Free UCLs

95% CLT UCL	67.96	95% Jackknife UCL	72.66
95% Standard Bootstrap UCL	65.83	95% Bootstrap-t UCL	289.3
95% Hall's Bootstrap UCL	241.8	95% Percentile Bootstrap UCL	74.71
95% BCA Bootstrap UCL	78.72		
90% Chebyshev(Mean, Sd) UCL	97.65	95% Chebyshev(Mean, Sd) UCL	127.4
97.5% Chebyshev(Mean, Sd) UCL	168.7	99% Chebyshev(Mean, Sd) UCL	249.9

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.26	Mean	46.62
Maximum	289	Median	16.5
SD	91.74	Std. Error of Mean	30.58
Coefficient of Variation	1.968	Skewness	2.896
Mean of logged Data	2.769	SD of logged Data	1.438

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	103.5	95% Adjusted-CLT UCL (Chen-1995)	128.5
		95% Modified-t UCL (Johnson-1978)	108.4

Nonparametric Distribution Free UCLs

95% CLT UCL	96.92	95% Jackknife UCL	103.5
95% Standard Bootstrap UCL	94.87	95% Bootstrap-t UCL	361.3
95% Hall's Bootstrap UCL	324.8	95% Percentile Bootstrap UCL	106.1
95% BCA Bootstrap UCL	135.7		
90% Chebyshev(Mean, Sd) UCL	138.4	95% Chebyshev(Mean, Sd) UCL	179.9
97.5% Chebyshev(Mean, Sd) UCL	237.6	99% Chebyshev(Mean, Sd) UCL	350.9

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.59	Mean	28.82
Maximum	173	Median	10.7
SD	54.63	Std. Error of Mean	18.21
Coefficient of Variation	1.896	Skewness	2.885
Mean of logged Data	2.407	SD of logged Data	1.324

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.68	95% Adjusted-CLT UCL (Chen-1995)	77.48
		95% Modified-t UCL (Johnson-1978)	65.59

Nonparametric Distribution Free UCLs

95% CLT UCL	58.77	95% Jackknife UCL	62.68
95% Standard Bootstrap UCL	57.39	95% Bootstrap-t UCL	196.5
95% Hall's Bootstrap UCL	190.3	95% Percentile Bootstrap UCL	63.73
95% BCA Bootstrap UCL	81.81		
90% Chebyshev(Mean, Sd) UCL	83.44	95% Chebyshev(Mean, Sd) UCL	108.2
97.5% Chebyshev(Mean, Sd) UCL	142.5	99% Chebyshev(Mean, Sd) UCL	210

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	18.34
Maximum	115	Median	6.87
SD	36.48	Std. Error of Mean	12.16
Coefficient of Variation	1.989	Skewness	2.929
Mean of logged Data	1.934	SD of logged Data	1.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.95	95% Adjusted-CLT UCL (Chen-1995)	51.02
		95% Modified-t UCL (Johnson-1978)	42.92

Nonparametric Distribution Free UCLs

95% CLT UCL	38.34	95% Jackknife UCL	40.95
95% Standard Bootstrap UCL	37.23	95% Bootstrap-t UCL	157.3
95% Hall's Bootstrap UCL	136.9	95% Percentile Bootstrap UCL	42.24
95% BCA Bootstrap UCL	54.85		
90% Chebyshev(Mean, Sd) UCL	54.81	95% Chebyshev(Mean, Sd) UCL	71.33
97.5% Chebyshev(Mean, Sd) UCL	94.27	99% Chebyshev(Mean, Sd) UCL	139.3

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.12	Mean	41.29
Maximum	260	Median	12.6
SD	82.81	Std. Error of Mean	27.6
Coefficient of Variation	2.005	Skewness	2.891
Mean of logged Data	2.549	SD of logged Data	1.541

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	92.63	95% Adjusted-CLT UCL (Chen-1995)	115.1
		95% Modified-t UCL (Johnson-1978)	97.06

Nonparametric Distribution Free UCLs

95% CLT UCL	86.7	95% Jackknife UCL	92.63
95% Standard Bootstrap UCL	84.29	95% Bootstrap-t UCL	324.3
95% Hall's Bootstrap UCL	281.4	95% Percentile Bootstrap UCL	94.6
95% BCA Bootstrap UCL	120.7		
90% Chebyshev(Mean, Sd) UCL	124.1	95% Chebyshev(Mean, Sd) UCL	161.6
97.5% Chebyshev(Mean, Sd) UCL	213.7	99% Chebyshev(Mean, Sd) UCL	316

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.14	Mean	11.56
Maximum	48.6	Median	3.325
SD	14.67	Std. Error of Mean	4.891
Coefficient of Variation	1.269	Skewness	2.441
Mean of logged Data	1.945	SD of logged Data	0.988

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.66	95% Adjusted-CLT UCL (Chen-1995)	23.86
		95% Modified-t UCL (Johnson-1978)	21.32

Nonparametric Distribution Free UCLs

95% CLT UCL	19.61	95% Jackknife UCL	20.66
95% Standard Bootstrap UCL	19.17	95% Bootstrap-t UCL	32.59
95% Hall's Bootstrap UCL	47.21	95% Percentile Bootstrap UCL	20.52
95% BCA Bootstrap UCL	23.41		
90% Chebyshev(Mean, Sd) UCL	26.23	95% Chebyshev(Mean, Sd) UCL	32.88
97.5% Chebyshev(Mean, Sd) UCL	42.1	99% Chebyshev(Mean, Sd) UCL	60.22

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	32.88

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	46.8
Maximum	343	Median	10.8
SD	111.4	Std. Error of Mean	37.13
Coefficient of Variation	2.38	Skewness	2.968
Mean of logged Data	2.307	SD of logged Data	1.632

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	115.8	95% Adjusted-CLT UCL (Chen-1995)	147.1
		95% Modified-t UCL (Johnson-1978)	122

Nonparametric Distribution Free UCLs

95% CLT UCL	107.9	95% Jackknife UCL	115.8
95% Standard Bootstrap UCL	105.1	95% Bootstrap-t UCL	912.3
95% Hall's Bootstrap UCL	532.7	95% Percentile Bootstrap UCL	119.8
95% BCA Bootstrap UCL	158.8		
90% Chebyshev(Mean, Sd) UCL	158.2	95% Chebyshev(Mean, Sd) UCL	208.6
97.5% Chebyshev(Mean, Sd) UCL	278.7	99% Chebyshev(Mean, Sd) UCL	416.2

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.11	Mean	4.194
Maximum	17.1	Median	1.73
SD	5.112	Std. Error of Mean	1.704
Coefficient of Variation	1.219	Skewness	2.447
Mean of logged Data	0.983	SD of logged Data	0.93

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.362	95% Adjusted-CLT UCL (Chen-1995)	8.482
		95% Modified-t UCL (Johnson-1978)	7.594

Nonparametric Distribution Free UCLs

95% CLT UCL	6.997	95% Jackknife UCL	7.362
95% Standard Bootstrap UCL	6.893	95% Bootstrap-t UCL	12.18
95% Hall's Bootstrap UCL	16.63	95% Percentile Bootstrap UCL	7.313
95% BCA Bootstrap UCL	8.585		
90% Chebyshev(Mean, Sd) UCL	9.306	95% Chebyshev(Mean, Sd) UCL	11.62
97.5% Chebyshev(Mean, Sd) UCL	14.83	99% Chebyshev(Mean, Sd) UCL	21.15

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.55	Mean	26.58
Maximum	162	Median	9.78
SD	51.21	Std. Error of Mean	17.07
Coefficient of Variation	1.927	Skewness	2.905
Mean of logged Data	2.335	SD of logged Data	1.289

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.32	95% Adjusted-CLT UCL (Chen-1995)	72.32
		95% Modified-t UCL (Johnson-1978)	61.08

Nonparametric Distribution Free UCLs

95% CLT UCL	54.66	95% Jackknife UCL	58.32
95% Standard Bootstrap UCL	52.59	95% Bootstrap-t UCL	209.1
95% Hall's Bootstrap UCL	181	95% Percentile Bootstrap UCL	58.92
95% BCA Bootstrap UCL	77.13		
90% Chebyshev(Mean, Sd) UCL	77.79	95% Chebyshev(Mean, Sd) UCL	101
97.5% Chebyshev(Mean, Sd) UCL	133.2	99% Chebyshev(Mean, Sd) UCL	196.4

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.86	Mean	5.947
Maximum	8.73	Median	5.53
SD	1.576	Std. Error of Mean	0.525
Coefficient of Variation	0.265	Skewness	0.918
Mean of logged Data	1.753	SD of logged Data	0.254

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.923	95% Adjusted-CLT UCL (Chen-1995)	6.982
		95% Modified-t UCL (Johnson-1978)	6.95

Nonparametric Distribution Free UCLs

95% CLT UCL	6.811	95% Jackknife UCL	6.923
95% Standard Bootstrap UCL	6.768	95% Bootstrap-t UCL	7.673
95% Hall's Bootstrap UCL	13.94	95% Percentile Bootstrap UCL	6.769

95% BCA Bootstrap UCL	6.86		
90% Chebyshev(Mean, Sd) UCL	7.522	95% Chebyshev(Mean, Sd) UCL	8.236
97.5% Chebyshev(Mean, Sd) UCL	9.227	99% Chebyshev(Mean, Sd) UCL	11.17

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.14	Mean	34.28
Maximum	256	Median	4.95
SD	83.25	Std. Error of Mean	27.75
Coefficient of Variation	2.428	Skewness	2.986
Mean of logged Data	2.134	SD of logged Data	1.401

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	85.88	95% Adjusted-CLT UCL (Chen-1995)	109.4
		95% Modified-t UCL (Johnson-1978)	90.48

Nonparametric Distribution Free UCLs

95% CLT UCL	79.92	95% Jackknife UCL	85.88
95% Standard Bootstrap UCL	77.15	95% Bootstrap-t UCL	979.2
95% Hall's Bootstrap UCL	573.7	95% Percentile Bootstrap UCL	89.11
95% BCA Bootstrap UCL	116.5		
90% Chebyshev(Mean, Sd) UCL	117.5	95% Chebyshev(Mean, Sd) UCL	155.2
97.5% Chebyshev(Mean, Sd) UCL	207.6	99% Chebyshev(Mean, Sd) UCL	310.4

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.14	Mean	39.22
Maximum	276	Median	10
SD	89.07	Std. Error of Mean	29.69
Coefficient of Variation	2.271	Skewness	2.965

Mean of logged Data	2.397	SD of logged Data	1.418

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	94.43	95% Adjusted-CLT UCL (Chen-1995)	119.4
		95% Modified-t UCL (Johnson-1978)	99.32

Nonparametric Distribution Free UCLs

95% CLT UCL	88.06	95% Jackknife UCL	94.43
95% Standard Bootstrap UCL	84.05	95% Bootstrap-t UCL	650.1
95% Hall's Bootstrap UCL	366	95% Percentile Bootstrap UCL	96.18
95% BCA Bootstrap UCL	128.3		
90% Chebyshev(Mean, Sd) UCL	128.3	95% Chebyshev(Mean, Sd) UCL	168.6
97.5% Chebyshev(Mean, Sd) UCL	224.6	99% Chebyshev(Mean, Sd) UCL	334.6

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:27:28 PM
From File	05267_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.9	Mean	14.24
Maximum	16.4	Median	13.8
SD	1.06	Std. Error of Mean	0.353
Coefficient of Variation	0.0744	Skewness	1.08
Mean of logged Data	2.654	SD of logged Data	0.0724

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.9	95% Adjusted-CLT UCL (Chen-1995)	14.96
		95% Modified-t UCL (Johnson-1978)	14.92

Nonparametric Distribution Free UCLs

95% CLT UCL	14.83	95% Jackknife UCL	14.9
95% Standard Bootstrap UCL	14.81	95% Bootstrap-t UCL	15.16
95% Hall's Bootstrap UCL	15.19	95% Percentile Bootstrap UCL	14.8
95% BCA Bootstrap UCL	14.9		
90% Chebyshev(Mean, Sd) UCL	15.3	95% Chebyshev(Mean, Sd) UCL	15.78
97.5% Chebyshev(Mean, Sd) UCL	16.45	99% Chebyshev(Mean, Sd) UCL	17.76

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.5	Mean	37.49
Maximum	94.9	Median	43
SD	26.58	Std. Error of Mean	8.859
Coefficient of Variation	0.709	Skewness	1.162
Mean of logged Data	3.377	SD of logged Data	0.784

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.96	95% Adjusted-CLT UCL (Chen-1995)	55.73
		95% Modified-t UCL (Johnson-1978)	54.53

Nonparametric Distribution Free UCLs

95% CLT UCL	52.06	95% Jackknife UCL	53.96
95% Standard Bootstrap UCL	51.31	95% Bootstrap-t UCL	60.63
95% Hall's Bootstrap UCL	65.65	95% Percentile Bootstrap UCL	52.24
95% BCA Bootstrap UCL	53.86		
90% Chebyshev(Mean, Sd) UCL	64.07	95% Chebyshev(Mean, Sd) UCL	76.11
97.5% Chebyshev(Mean, Sd) UCL	92.81	99% Chebyshev(Mean, Sd) UCL	125.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	47.4	Mean	61.74
Maximum	87.6	Median	51.9
SD	17.57	Std. Error of Mean	5.855
Coefficient of Variation	0.284	Skewness	0.838
Mean of logged Data	4.09	SD of logged Data	0.267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	72.63	95% Adjusted-CLT UCL (Chen-1995)	73.12
		95% Modified-t UCL (Johnson-1978)	72.91

Nonparametric Distribution Free UCLs

95% CLT UCL	71.38	95% Jackknife UCL	72.63
95% Standard Bootstrap UCL	70.73	95% Bootstrap-t UCL	74.84
95% Hall's Bootstrap UCL	67.61	95% Percentile Bootstrap UCL	70.5
95% BCA Bootstrap UCL	72.46		
90% Chebyshev(Mean, Sd) UCL	79.31	95% Chebyshev(Mean, Sd) UCL	87.27
97.5% Chebyshev(Mean, Sd) UCL	98.31	99% Chebyshev(Mean, Sd) UCL	120

Suggested UCL to Use

95% Student's-t UCL	72.63	or 95% Modified-t UCL	72.91

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.677	Mean	1.429
Maximum	2.68	Median	1.19
SD	0.743	Std. Error of Mean	0.248
Coefficient of Variation	0.52	Skewness	0.722
Mean of logged Data	0.239	SD of logged Data	0.515

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.89	95% Adjusted-CLT UCL (Chen-1995)	1.901
		95% Modified-t UCL (Johnson-1978)	1.9

Nonparametric Distribution Free UCLs

95% CLT UCL	1.837	95% Jackknife UCL	1.89
95% Standard Bootstrap UCL	1.807	95% Bootstrap-t UCL	2.015
95% Hall's Bootstrap UCL	1.921	95% Percentile Bootstrap UCL	1.82
95% BCA Bootstrap UCL	1.868		
90% Chebyshev(Mean, Sd) UCL	2.172	95% Chebyshev(Mean, Sd) UCL	2.509
97.5% Chebyshev(Mean, Sd) UCL	2.976	99% Chebyshev(Mean, Sd) UCL	3.894

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.371	Mean	0.83
Maximum	2.08	Median	0.515
SD	0.683	Std. Error of Mean	0.228
Coefficient of Variation	0.823	Skewness	1.533
Mean of logged Data	-0.416	SD of logged Data	0.664

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.254	95% Adjusted-CLT UCL (Chen-1995)	1.329
		95% Modified-t UCL (Johnson-1978)	1.273

Nonparametric Distribution Free UCLs

95% CLT UCL	1.205	95% Jackknife UCL	1.254
95% Standard Bootstrap UCL	1.173	95% Bootstrap-t UCL	3.045
95% Hall's Bootstrap UCL	3.35	95% Percentile Bootstrap UCL	1.184
95% BCA Bootstrap UCL	1.301		
90% Chebyshev(Mean, Sd) UCL	1.514	95% Chebyshev(Mean, Sd) UCL	1.823
97.5% Chebyshev(Mean, Sd) UCL	2.252	99% Chebyshev(Mean, Sd) UCL	3.096

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.823

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	3.316
Maximum	7.95	Median	2.12
SD	2.033	Std. Error of Mean	0.678
Coefficient of Variation	0.613	Skewness	1.795
Mean of logged Data	1.07	SD of logged Data	0.504

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.576	95% Adjusted-CLT UCL (Chen-1995)	4.864
		95% Modified-t UCL (Johnson-1978)	4.644

Nonparametric Distribution Free UCLs

95% CLT UCL	4.431	95% Jackknife UCL	4.576
95% Standard Bootstrap UCL	4.374	95% Bootstrap-t UCL	6.121
95% Hall's Bootstrap UCL	8.729	95% Percentile Bootstrap UCL	4.548
95% BCA Bootstrap UCL	4.769		
90% Chebyshev(Mean, Sd) UCL	5.349	95% Chebyshev(Mean, Sd) UCL	6.269
97.5% Chebyshev(Mean, Sd) UCL	7.547	99% Chebyshev(Mean, Sd) UCL	10.06

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.269

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	12.52
Maximum	33.8	Median	10.3
SD	10.9	Std. Error of Mean	3.632
Coefficient of Variation	0.87	Skewness	0.828
Mean of logged Data	2.067	SD of logged Data	1.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.28	95% Adjusted-CLT UCL (Chen-1995)	19.57
		95% Modified-t UCL (Johnson-1978)	19.44

Nonparametric Distribution Free UCLs

95% CLT UCL	18.5	95% Jackknife UCL	19.28
95% Standard Bootstrap UCL	18.13	95% Bootstrap-t UCL	20.94
95% Hall's Bootstrap UCL	19.51	95% Percentile Bootstrap UCL	18.45
95% BCA Bootstrap UCL	19.28		
90% Chebyshev(Mean, Sd) UCL	23.42	95% Chebyshev(Mean, Sd) UCL	28.35
97.5% Chebyshev(Mean, Sd) UCL	35.2	99% Chebyshev(Mean, Sd) UCL	48.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	17.28
Maximum	49.2	Median	15.9
SD	15.75	Std. Error of Mean	5.251
Coefficient of Variation	0.912	Skewness	0.956
Mean of logged Data	2.297	SD of logged Data	1.264

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	27.04	95% Adjusted-CLT UCL (Chen-1995)	27.7
		95% Modified-t UCL (Johnson-1978)	27.32

Nonparametric Distribution Free UCLs

95% CLT UCL	25.91	95% Jackknife UCL	27.04
95% Standard Bootstrap UCL	25.2	95% Bootstrap-t UCL	29.7
95% Hall's Bootstrap UCL	28.7	95% Percentile Bootstrap UCL	26.13
95% BCA Bootstrap UCL	26.87		
90% Chebyshev(Mean, Sd) UCL	33.03	95% Chebyshev(Mean, Sd) UCL	40.16
97.5% Chebyshev(Mean, Sd) UCL	50.07	99% Chebyshev(Mean, Sd) UCL	69.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	24.28
Maximum	62.4	Median	22
SD	20.83	Std. Error of Mean	6.943
Coefficient of Variation	0.858	Skewness	0.612
Mean of logged Data	2.677	SD of logged Data	1.22

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.19	95% Adjusted-CLT UCL (Chen-1995)	37.21
		95% Modified-t UCL (Johnson-1978)	37.43

Nonparametric Distribution Free UCLs

95% CLT UCL	35.7	95% Jackknife UCL	37.19
95% Standard Bootstrap UCL	34.77	95% Bootstrap-t UCL	39.46
95% Hall's Bootstrap UCL	36.85	95% Percentile Bootstrap UCL	35.53
95% BCA Bootstrap UCL	35.78		
90% Chebyshev(Mean, Sd) UCL	45.11	95% Chebyshev(Mean, Sd) UCL	54.54
97.5% Chebyshev(Mean, Sd) UCL	67.64	99% Chebyshev(Mean, Sd) UCL	93.36

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	13.85
Maximum	37.7	Median	12
SD	11.73	Std. Error of Mean	3.911
Coefficient of Variation	0.847	Skewness	1.054
Mean of logged Data	2.26	SD of logged Data	0.957

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.13	95% Adjusted-CLT UCL (Chen-1995)	21.75
		95% Modified-t UCL (Johnson-1978)	21.35

Nonparametric Distribution Free UCLs

95% CLT UCL	20.29	95% Jackknife UCL	21.13
95% Standard Bootstrap UCL	19.77	95% Bootstrap-t UCL	24.01
95% Hall's Bootstrap UCL	22.49	95% Percentile Bootstrap UCL	20.12
95% BCA Bootstrap UCL	21.51		
90% Chebyshev(Mean, Sd) UCL	25.59	95% Chebyshev(Mean, Sd) UCL	30.9
97.5% Chebyshev(Mean, Sd) UCL	38.28	99% Chebyshev(Mean, Sd) UCL	52.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	8.861
Maximum	22.8	Median	8.67
SD	6.965	Std. Error of Mean	2.322
Coefficient of Variation	0.786	Skewness	0.899
Mean of logged Data	1.845	SD of logged Data	0.93

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.18	95% Adjusted-CLT UCL (Chen-1995)	13.42
		95% Modified-t UCL (Johnson-1978)	13.29

Nonparametric Distribution Free UCLs

95% CLT UCL	12.68	95% Jackknife UCL	13.18
95% Standard Bootstrap UCL	12.55	95% Bootstrap-t UCL	14.04
95% Hall's Bootstrap UCL	14.23	95% Percentile Bootstrap UCL	12.57
95% BCA Bootstrap UCL	13.4		
90% Chebyshev(Mean, Sd) UCL	15.83	95% Chebyshev(Mean, Sd) UCL	18.98
97.5% Chebyshev(Mean, Sd) UCL	23.36	99% Chebyshev(Mean, Sd) UCL	31.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	17.87
Maximum	50.7	Median	14.4
SD	16.41	Std. Error of Mean	5.471
Coefficient of Variation	0.919	Skewness	0.933
Mean of logged Data	2.319	SD of logged Data	1.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.04	95% Adjusted-CLT UCL (Chen-1995)	28.68
		95% Modified-t UCL (Johnson-1978)	28.32

Nonparametric Distribution Free UCLs

95% CLT UCL	26.86	95% Jackknife UCL	28.04
95% Standard Bootstrap UCL	26.23	95% Bootstrap-t UCL	31.45
95% Hall's Bootstrap UCL	30.22	95% Percentile Bootstrap UCL	26.21
95% BCA Bootstrap UCL	28.08		
90% Chebyshev(Mean, Sd) UCL	34.28	95% Chebyshev(Mean, Sd) UCL	41.71
97.5% Chebyshev(Mean, Sd) UCL	52.03	99% Chebyshev(Mean, Sd) UCL	72.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	5.227

Maximum	12.25	Median	3.91
SD	3.219	Std. Error of Mean	1.073
Coefficient of Variation	0.616	Skewness	1.72
Mean of logged Data	1.525	SD of logged Data	0.502

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.222	95% Adjusted-CLT UCL (Chen-1995)	7.649
		95% Modified-t UCL (Johnson-1978)	7.325

Nonparametric Distribution Free UCLs

95% CLT UCL	6.992	95% Jackknife UCL	7.222
95% Standard Bootstrap UCL	6.921	95% Bootstrap-t UCL	12.19
95% Hall's Bootstrap UCL	15.87	95% Percentile Bootstrap UCL	7.004
95% BCA Bootstrap UCL	7.655		
90% Chebyshev(Mean, Sd) UCL	8.446	95% Chebyshev(Mean, Sd) UCL	9.904
97.5% Chebyshev(Mean, Sd) UCL	11.93	99% Chebyshev(Mean, Sd) UCL	15.9

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	24.51
Maximum	60.4	Median	18
SD	21.64	Std. Error of Mean	7.213
Coefficient of Variation	0.883	Skewness	0.381
Mean of logged Data	2.546	SD of logged Data	1.438

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.92	95% Adjusted-CLT UCL (Chen-1995)	37.35
		95% Modified-t UCL (Johnson-1978)	38.07

Nonparametric Distribution Free UCLs

95% CLT UCL	36.37	95% Jackknife UCL	37.92
95% Standard Bootstrap UCL	35.69	95% Bootstrap-t UCL	39.64
95% Hall's Bootstrap UCL	35.58	95% Percentile Bootstrap UCL	35.75
95% BCA Bootstrap UCL	36.13		

90% Chebyshev(Mean, Sd) UCL	46.15	95% Chebyshev(Mean, Sd) UCL	55.95
97.5% Chebyshev(Mean, Sd) UCL	69.55	99% Chebyshev(Mean, Sd) UCL	96.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.06	Mean	1.637
Maximum	4.895	Median	1.26
SD	1.224	Std. Error of Mean	0.408
Coefficient of Variation	0.748	Skewness	2.979
Mean of logged Data	0.358	SD of logged Data	0.465

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.395	95% Adjusted-CLT UCL (Chen-1995)	2.741
		95% Modified-t UCL (Johnson-1978)	2.463

Nonparametric Distribution Free UCLs

95% CLT UCL	2.308	95% Jackknife UCL	2.395
95% Standard Bootstrap UCL	2.262	95% Bootstrap-t UCL	13.93
95% Hall's Bootstrap UCL	9.866	95% Percentile Bootstrap UCL	2.439
95% BCA Bootstrap UCL	2.489		
90% Chebyshev(Mean, Sd) UCL	2.861	95% Chebyshev(Mean, Sd) UCL	3.415
97.5% Chebyshev(Mean, Sd) UCL	4.185	99% Chebyshev(Mean, Sd) UCL	5.697

Suggested UCL to Use

95% Student's-t UCL	2.395	or 95% Modified-t UCL	2.463

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	14.31
Maximum	38.1	Median	13.7
SD	11.7	Std. Error of Mean	3.901
Coefficient of Variation	0.818	Skewness	0.986
Mean of logged Data	2.301	SD of logged Data	0.959

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.57	95% Adjusted-CLT UCL (Chen-1995)	22.1
		95% Modified-t UCL (Johnson-1978)	21.78

Nonparametric Distribution Free UCLs

95% CLT UCL	20.73	95% Jackknife UCL	21.57
95% Standard Bootstrap UCL	20.46	95% Bootstrap-t UCL	23.91
95% Hall's Bootstrap UCL	23.32	95% Percentile Bootstrap UCL	20.21
95% BCA Bootstrap UCL	22.01		
90% Chebyshev(Mean, Sd) UCL	26.02	95% Chebyshev(Mean, Sd) UCL	31.32
97.5% Chebyshev(Mean, Sd) UCL	38.68	99% Chebyshev(Mean, Sd) UCL	53.13

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.29	Mean	2.32
Maximum	4.02	Median	2.21
SD	1.062	Std. Error of Mean	0.354
Coefficient of Variation	0.458	Skewness	0.843
Mean of logged Data	0.753	SD of logged Data	0.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.978	95% Adjusted-CLT UCL (Chen-1995)	3.009
		95% Modified-t UCL (Johnson-1978)	2.995

Nonparametric Distribution Free UCLs

95% CLT UCL	2.902	95% Jackknife UCL	2.978
95% Standard Bootstrap UCL	2.87	95% Bootstrap-t UCL	3.282
95% Hall's Bootstrap UCL	3.361	95% Percentile Bootstrap UCL	2.904
95% BCA Bootstrap UCL	2.956		
90% Chebyshev(Mean, Sd) UCL	3.382	95% Chebyshev(Mean, Sd) UCL	3.863
97.5% Chebyshev(Mean, Sd) UCL	4.531	99% Chebyshev(Mean, Sd) UCL	5.843

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	10.79
Maximum	23.6	Median	6.68
SD	8.093	Std. Error of Mean	2.698
Coefficient of Variation	0.75	Skewness	0.454
Mean of logged Data	2.079	SD of logged Data	0.851

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.81	95% Adjusted-CLT UCL (Chen-1995)	15.66
		95% Modified-t UCL (Johnson-1978)	15.87

Nonparametric Distribution Free UCLs

95% CLT UCL	15.23	95% Jackknife UCL	15.81
95% Standard Bootstrap UCL	14.91	95% Bootstrap-t UCL	16.33
95% Hall's Bootstrap UCL	14.33	95% Percentile Bootstrap UCL	15
95% BCA Bootstrap UCL	15.25		
90% Chebyshev(Mean, Sd) UCL	18.88	95% Chebyshev(Mean, Sd) UCL	22.55
97.5% Chebyshev(Mean, Sd) UCL	27.64	99% Chebyshev(Mean, Sd) UCL	37.63

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	23.86
Maximum	63.1	Median	17.6
SD	20.91	Std. Error of Mean	6.969
Coefficient of Variation	0.876	Skewness	0.709
Mean of logged Data	2.658	SD of logged Data	1.212

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.82	95% Adjusted-CLT UCL (Chen-1995)	37.08
		95% Modified-t UCL (Johnson-1978)	37.09

Nonparametric Distribution Free UCLs

95% CLT UCL	35.32	95% Jackknife UCL	36.82
95% Standard Bootstrap UCL	34.99	95% Bootstrap-t UCL	38.5
95% Hall's Bootstrap UCL	36.4	95% Percentile Bootstrap UCL	35.52
95% BCA Bootstrap UCL	35.63		
90% Chebyshev(Mean, Sd) UCL	44.76	95% Chebyshev(Mean, Sd) UCL	54.23
97.5% Chebyshev(Mean, Sd) UCL	67.38	99% Chebyshev(Mean, Sd) UCL	93.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:28:32 PM
From File	27024_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.5	Mean	14.83
Maximum	23.1	Median	13.8
SD	4.086	Std. Error of Mean	1.362
Coefficient of Variation	0.275	Skewness	1.294
Mean of logged Data	2.667	SD of logged Data	0.253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.37	95% Adjusted-CLT UCL (Chen-1995)	17.7
		95% Modified-t UCL (Johnson-1978)	17.46

Nonparametric Distribution Free UCLs

95% CLT UCL	17.07	95% Jackknife UCL	17.37
95% Standard Bootstrap UCL	16.97	95% Bootstrap-t UCL	20.33
95% Hall's Bootstrap UCL	35.33	95% Percentile Bootstrap UCL	17.01
95% BCA Bootstrap UCL	17.56		
90% Chebyshev(Mean, Sd) UCL	18.92	95% Chebyshev(Mean, Sd) UCL	20.77
97.5% Chebyshev(Mean, Sd) UCL	23.34	99% Chebyshev(Mean, Sd) UCL	28.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.4	Mean	23.73
Maximum	70.8	Median	16.3
SD	19.12	Std. Error of Mean	6.373
Coefficient of Variation	0.806	Skewness	2.245
Mean of logged Data	2.963	SD of logged Data	0.631

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.58	95% Adjusted-CLT UCL (Chen-1995)	39.3
		95% Modified-t UCL (Johnson-1978)	36.37

Nonparametric Distribution Free UCLs

95% CLT UCL	34.21	95% Jackknife UCL	35.58
95% Standard Bootstrap UCL	33.98	95% Bootstrap-t UCL	56.23
95% Hall's Bootstrap UCL	77.68	95% Percentile Bootstrap UCL	34.22
95% BCA Bootstrap UCL	40.19		
90% Chebyshev(Mean, Sd) UCL	42.84	95% Chebyshev(Mean, Sd) UCL	51.5
97.5% Chebyshev(Mean, Sd) UCL	63.52	99% Chebyshev(Mean, Sd) UCL	87.13

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	37.2	Mean	39.63
Maximum	43	Median	39.7
SD	1.652	Std. Error of Mean	0.551
Coefficient of Variation	0.0417	Skewness	0.796
Mean of logged Data	3.679	SD of logged Data	0.0412

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.66	95% Adjusted-CLT UCL (Chen-1995)	40.69
		95% Modified-t UCL (Johnson-1978)	40.68

Nonparametric Distribution Free UCLs

95% CLT UCL	40.54	95% Jackknife UCL	40.66
95% Standard Bootstrap UCL	40.48	95% Bootstrap-t UCL	40.88
95% Hall's Bootstrap UCL	41.26	95% Percentile Bootstrap UCL	40.48
95% BCA Bootstrap UCL	40.59		
90% Chebyshev(Mean, Sd) UCL	41.28	95% Chebyshev(Mean, Sd) UCL	42.03
97.5% Chebyshev(Mean, Sd) UCL	43.07	99% Chebyshev(Mean, Sd) UCL	45.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.915	Mean	1.087
Maximum	1.97	Median	0.985
SD	0.332	Std. Error of Mean	0.111
Coefficient of Variation	0.306	Skewness	2.964
Mean of logged Data	0.0536	SD of logged Data	0.236

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.293	95% Adjusted-CLT UCL (Chen-1995)	1.386
		95% Modified-t UCL (Johnson-1978)	1.311

Nonparametric Distribution Free UCLs

95% CLT UCL	1.269	95% Jackknife UCL	1.293
95% Standard Bootstrap UCL	1.255	95% Bootstrap-t UCL	3.669
95% Hall's Bootstrap UCL	3.114	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.316		
90% Chebyshev(Mean, Sd) UCL	1.419	95% Chebyshev(Mean, Sd) UCL	1.569
97.5% Chebyshev(Mean, Sd) UCL	1.778	99% Chebyshev(Mean, Sd) UCL	2.189

Suggested UCL to Use

95% Student's-t UCL	1.293	or 95% Modified-t UCL	1.311

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.488	Mean	0.521
Maximum	0.535	Median	0.525
SD	0.0146	Std. Error of Mean	0.00488
Coefficient of Variation	0.0281	Skewness	-1.8
Mean of logged Data	-0.652	SD of logged Data	0.0287

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.53	95% Adjusted-CLT UCL (Chen-1995)	0.526
		95% Modified-t UCL (Johnson-1978)	0.53

Nonparametric Distribution Free UCLs

95% CLT UCL	0.529	95% Jackknife UCL	0.53
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.536	95% Chebyshev(Mean, Sd) UCL	0.543
97.5% Chebyshev(Mean, Sd) UCL	0.552	99% Chebyshev(Mean, Sd) UCL	0.57

Suggested UCL to Use

95% Student's-t UCL	0.53	or 95% Modified-t UCL	0.53

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.98	Mean	2.117
Maximum	2.165	Median	2.135
SD	0.0576	Std. Error of Mean	0.0192
Coefficient of Variation	0.0272	Skewness	-1.993
Mean of logged Data	0.75	SD of logged Data	0.0278

Note: Sample size is small (e.g., <10), If data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.152	95% Adjusted-CLT UCL (Chen-1995)	2.135
		95% Modified-t UCL (Johnson-1978)	2.15

Nonparametric Distribution Free UCLs

95% CLT UCL	2.148	95% Jackknife UCL	2.152
95% Standard Bootstrap UCL	2.147	95% Bootstrap-t UCL	2.142
95% Hall's Bootstrap UCL	2.139	95% Percentile Bootstrap UCL	2.143
95% BCA Bootstrap UCL	2.138		
90% Chebyshev(Mean, Sd) UCL	2.174	95% Chebyshev(Mean, Sd) UCL	2.2
97.5% Chebyshev(Mean, Sd) UCL	2.237	99% Chebyshev(Mean, Sd) UCL	2.308

Suggested UCL to Use

95% Student's-t UCL	2.152	or 95% Modified-t UCL	2.15

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	2.821
Maximum	5.07	Median	2.28
SD	1.122	Std. Error of Mean	0.374
Coefficient of Variation	0.398	Skewness	1.471
Mean of logged Data	0.979	SD of logged Data	0.345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.516	95% Adjusted-CLT UCL (Chen-1995)	3.632
		95% Modified-t UCL (Johnson-1978)	3.547

Nonparametric Distribution Free UCLs

95% CLT UCL	3.436	95% Jackknife UCL	3.516
95% Standard Bootstrap UCL	3.394	95% Bootstrap-t UCL	4.854
95% Hall's Bootstrap UCL	5.944	95% Percentile Bootstrap UCL	3.419
95% BCA Bootstrap UCL	3.622		
90% Chebyshev(Mean, Sd) UCL	3.943	95% Chebyshev(Mean, Sd) UCL	4.451
97.5% Chebyshev(Mean, Sd) UCL	5.156	99% Chebyshev(Mean, Sd) UCL	6.541

Suggested UCL to Use

95% Student's-t UCL	3.516	or 95% Modified-t UCL	3.547

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	2.873
Maximum	4.96	Median	2.4
SD	0.994	Std. Error of Mean	0.331
Coefficient of Variation	0.346	Skewness	1.354
Mean of logged Data	1.009	SD of logged Data	0.311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.489	95% Adjusted-CLT UCL (Chen-1995)	3.578
		95% Modified-t UCL (Johnson-1978)	3.514

Nonparametric Distribution Free UCLs

95% CLT UCL	3.418	95% Jackknife UCL	3.489
95% Standard Bootstrap UCL	3.388	95% Bootstrap-t UCL	3.861
95% Hall's Bootstrap UCL	3.576	95% Percentile Bootstrap UCL	3.383
95% BCA Bootstrap UCL	3.561		
90% Chebyshev(Mean, Sd) UCL	3.867	95% Chebyshev(Mean, Sd) UCL	4.317
97.5% Chebyshev(Mean, Sd) UCL	4.942	99% Chebyshev(Mean, Sd) UCL	6.169

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.79	Mean	3.903
Maximum	6.42	Median	3.29
SD	1.188	Std. Error of Mean	0.396
Coefficient of Variation	0.304	Skewness	1.453
Mean of logged Data	1.326	SD of logged Data	0.273

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.639	95% Adjusted-CLT UCL (Chen-1995)	4.759
		95% Modified-t UCL (Johnson-1978)	4.671

Nonparametric Distribution Free UCLs

95% CLT UCL	4.554	95% Jackknife UCL	4.639
95% Standard Bootstrap UCL	4.543	95% Bootstrap-t UCL	5.337
95% Hall's Bootstrap UCL	6.953	95% Percentile Bootstrap UCL	4.57
95% BCA Bootstrap UCL	4.715		
90% Chebyshev(Mean, Sd) UCL	5.091	95% Chebyshev(Mean, Sd) UCL	5.629
97.5% Chebyshev(Mean, Sd) UCL	6.377	99% Chebyshev(Mean, Sd) UCL	7.844

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.24	Mean	3.006
Maximum	3.46	Median	3.195
SD	0.442	Std. Error of Mean	0.147
Coefficient of Variation	0.147	Skewness	-0.857
Mean of logged Data	1.09	SD of logged Data	0.157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.279	95% Adjusted-CLT UCL (Chen-1995)	3.203
		95% Modified-t UCL (Johnson-1978)	3.272

Nonparametric Distribution Free UCLs

95% CLT UCL	3.248	95% Jackknife UCL	3.279
95% Standard Bootstrap UCL	3.23	95% Bootstrap-t UCL	3.225
95% Hall's Bootstrap UCL	3.192	95% Percentile Bootstrap UCL	3.217
95% BCA Bootstrap UCL	3.211		
90% Chebyshev(Mean, Sd) UCL	3.447	95% Chebyshev(Mean, Sd) UCL	3.647
97.5% Chebyshev(Mean, Sd) UCL	3.925	99% Chebyshev(Mean, Sd) UCL	4.47

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	2.401
Maximum	4.12	Median	2.14
SD	0.664	Std. Error of Mean	0.221
Coefficient of Variation	0.277	Skewness	2.693
Mean of logged Data	0.85	SD of logged Data	0.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.812	95% Adjusted-CLT UCL (Chen-1995)	2.977
		95% Modified-t UCL (Johnson-1978)	2.845

Nonparametric Distribution Free UCLs

95% CLT UCL	2.765	95% Jackknife UCL	2.812
95% Standard Bootstrap UCL	2.744	95% Bootstrap-t UCL	4.258
95% Hall's Bootstrap UCL	4.266	95% Percentile Bootstrap UCL	2.813
95% BCA Bootstrap UCL	3.046		
90% Chebyshev(Mean, Sd) UCL	3.065	95% Chebyshev(Mean, Sd) UCL	3.365
97.5% Chebyshev(Mean, Sd) UCL	3.783	99% Chebyshev(Mean, Sd) UCL	4.603

Suggested UCL to Use

95% Student's-t UCL	2.812	or 95% Modified-t UCL	2.845

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	3.714
Maximum	7.5	Median	3.15
SD	1.963	Std. Error of Mean	0.654
Coefficient of Variation	0.528	Skewness	1.201
Mean of logged Data	1.203	SD of logged Data	0.48

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.931	95% Adjusted-CLT UCL (Chen-1995)	5.071
		95% Modified-t UCL (Johnson-1978)	4.975

Nonparametric Distribution Free UCLs

95% CLT UCL	4.791	95% Jackknife UCL	4.931
95% Standard Bootstrap UCL	4.735	95% Bootstrap-t UCL	5.8
95% Hall's Bootstrap UCL	6.055	95% Percentile Bootstrap UCL	4.749
95% BCA Bootstrap UCL	5.022		
90% Chebyshev(Mean, Sd) UCL	5.677	95% Chebyshev(Mean, Sd) UCL	6.567
97.5% Chebyshev(Mean, Sd) UCL	7.801	99% Chebyshev(Mean, Sd) UCL	10.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.92	Mean	3.216
Maximum	3.33	Median	3.28
SD	0.142	Std. Error of Mean	0.0472
Coefficient of Variation	0.044	Skewness	-1.52
Mean of logged Data	1.167	SD of logged Data	0.0453

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.304	95% Adjusted-CLT UCL (Chen-1995)	3.268
		95% Modified-t UCL (Johnson-1978)	3.3

Nonparametric Distribution Free UCLs

95% CLT UCL	3.294	95% Jackknife UCL	3.304
95% Standard Bootstrap UCL	3.289	95% Bootstrap-t UCL	3.281
95% Hall's Bootstrap UCL	3.271	95% Percentile Bootstrap UCL	3.286
95% BCA Bootstrap UCL	3.276		
90% Chebyshev(Mean, Sd) UCL	3.358	95% Chebyshev(Mean, Sd) UCL	3.422
97.5% Chebyshev(Mean, Sd) UCL	3.511	99% Chebyshev(Mean, Sd) UCL	3.686

Suggested UCL to Use

95% Student's-t UCL	3.304	or 95% Modified-t UCL	3.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	3.62
Maximum	7.82	Median	3.21
SD	1.828	Std. Error of Mean	0.609
Coefficient of Variation	0.505	Skewness	1.646
Mean of logged Data	1.191	SD of logged Data	0.449

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.753	95% Adjusted-CLT UCL (Chen-1995)	4.979
		95% Modified-t UCL (Johnson-1978)	4.809

Nonparametric Distribution Free UCLs

95% CLT UCL	4.622	95% Jackknife UCL	4.753
95% Standard Bootstrap UCL	4.57	95% Bootstrap-t UCL	5.42
95% Hall's Bootstrap UCL	8.842	95% Percentile Bootstrap UCL	4.672
95% BCA Bootstrap UCL	4.994		
90% Chebyshev(Mean, Sd) UCL	5.448	95% Chebyshev(Mean, Sd) UCL	6.276
97.5% Chebyshev(Mean, Sd) UCL	7.425	99% Chebyshev(Mean, Sd) UCL	9.682

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.22	Mean	1.303
Maximum	1.335	Median	1.315
SD	0.0348	Std. Error of Mean	0.0116
Coefficient of Variation	0.0267	Skewness	-2.038
Mean of logged Data	0.265	SD of logged Data	0.0273

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.325	95% Adjusted-CLT UCL (Chen-1995)	1.314
		95% Modified-t UCL (Johnson-1978)	1.324

Nonparametric Distribution Free UCLs

95% CLT UCL	1.322	95% Jackknife UCL	1.325
95% Standard Bootstrap UCL	1.322	95% Bootstrap-t UCL	1.318
95% Hall's Bootstrap UCL	1.316	95% Percentile Bootstrap UCL	1.319
95% BCA Bootstrap UCL	1.316		
90% Chebyshev(Mean, Sd) UCL	1.338	95% Chebyshev(Mean, Sd) UCL	1.354
97.5% Chebyshev(Mean, Sd) UCL	1.376	99% Chebyshev(Mean, Sd) UCL	1.419

Suggested UCL to Use

95% Student's-t UCL	1.325	or 95% Modified-t UCL	1.324

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.35	Mean	3.229
Maximum	3.85	Median	3.285
SD	0.396	Std. Error of Mean	0.132
Coefficient of Variation	0.123	Skewness	-1.126
Mean of logged Data	1.165	SD of logged Data	0.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.475	95% Adjusted-CLT UCL (Chen-1995)	3.394
		95% Modified-t UCL (Johnson-1978)	3.467

Nonparametric Distribution Free UCLs

95% CLT UCL	3.447	95% Jackknife UCL	3.475
95% Standard Bootstrap UCL	3.436	95% Bootstrap-t UCL	3.429
95% Hall's Bootstrap UCL	3.419	95% Percentile Bootstrap UCL	3.423
95% BCA Bootstrap UCL	3.396		
90% Chebyshev(Mean, Sd) UCL	3.626	95% Chebyshev(Mean, Sd) UCL	3.805
97.5% Chebyshev(Mean, Sd) UCL	4.055	99% Chebyshev(Mean, Sd) UCL	4.544

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.645	Mean	0.939
Maximum	1	Median	0.985
SD	0.113	Std. Error of Mean	0.0378
Coefficient of Variation	0.121	Skewness	-2.725
Mean of logged Data	-0.0704	SD of logged Data	0.141

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.01	95% Adjusted-CLT UCL (Chen-1995)	0.965
		95% Modified-t UCL (Johnson-1978)	1.004

Nonparametric Distribution Free UCLs

95% CLT UCL	1.002	95% Jackknife UCL	1.01
95% Standard Bootstrap UCL	0.999	95% Bootstrap-t UCL	0.987
95% Hall's Bootstrap UCL	0.977	95% Percentile Bootstrap UCL	0.986
95% BCA Bootstrap UCL	0.98		
90% Chebyshev(Mean, Sd) UCL	1.053	95% Chebyshev(Mean, Sd) UCL	1.104
97.5% Chebyshev(Mean, Sd) UCL	1.176	99% Chebyshev(Mean, Sd) UCL	1.316

Suggested UCL to Use

95% Student's-t UCL	1.01	or 95% Modified-t UCL	1.004

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.17	Mean	3.161
Maximum	3.43	Median	3.285
SD	0.385	Std. Error of Mean	0.128
Coefficient of Variation	0.122	Skewness	-2.635
Mean of logged Data	1.143	SD of logged Data	0.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.399	95% Adjusted-CLT UCL (Chen-1995)	3.251
		95% Modified-t UCL (Johnson-1978)	3.38

Nonparametric Distribution Free UCLs

95% CLT UCL	3.372	95% Jackknife UCL	3.399
95% Standard Bootstrap UCL	3.357	95% Bootstrap-t UCL	3.325
95% Hall's Bootstrap UCL	3.295	95% Percentile Bootstrap UCL	3.319
95% BCA Bootstrap UCL	3.301		
90% Chebyshev(Mean, Sd) UCL	3.546	95% Chebyshev(Mean, Sd) UCL	3.72
97.5% Chebyshev(Mean, Sd) UCL	3.962	99% Chebyshev(Mean, Sd) UCL	4.438

Suggested UCL to Use

95% Student's-t UCL	3.399	or 95% Modified-t UCL	3.38

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.81	Mean	4.041
Maximum	7.47	Median	3.57
SD	1.418	Std. Error of Mean	0.473
Coefficient of Variation	0.351	Skewness	2.071
Mean of logged Data	1.353	SD of logged Data	0.296

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.92	95% Adjusted-CLT UCL (Chen-1995)	5.167
		95% Modified-t UCL (Johnson-1978)	4.974

Nonparametric Distribution Free UCLs

95% CLT UCL	4.818	95% Jackknife UCL	4.92
95% Standard Bootstrap UCL	4.778	95% Bootstrap-t UCL	5.699
95% Hall's Bootstrap UCL	7.989	95% Percentile Bootstrap UCL	4.841
95% BCA Bootstrap UCL	5.091		
90% Chebyshev(Mean, Sd) UCL	5.459	95% Chebyshev(Mean, Sd) UCL	6.101
97.5% Chebyshev(Mean, Sd) UCL	6.993	99% Chebyshev(Mean, Sd) UCL	8.744

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:29:34 PM
From File	36017_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	7.37	Mean	9.996
Maximum	13.4	Median	9.8
SD	2.137	Std. Error of Mean	0.552
Coefficient of Variation	0.214	Skewness	0.25
Mean of logged Data	2.281	SD of logged Data	0.214

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.97	95% Adjusted-CLT UCL (Chen-1995)	10.94
		95% Modified-t UCL (Johnson-1978)	10.97

Nonparametric Distribution Free UCLs

95% CLT UCL	10.9	95% Jackknife UCL	10.97
95% Standard Bootstrap UCL	10.89	95% Bootstrap-t UCL	10.94
95% Hall's Bootstrap UCL	10.89	95% Percentile Bootstrap UCL	10.84
95% BCA Bootstrap UCL	10.89		
90% Chebyshev(Mean, Sd) UCL	11.65	95% Chebyshev(Mean, Sd) UCL	12.4
97.5% Chebyshev(Mean, Sd) UCL	13.44	99% Chebyshev(Mean, Sd) UCL	15.48

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	7.08	Mean	15.18
Maximum	54.7	Median	10.5
SD	13.51	Std. Error of Mean	3.488
Coefficient of Variation	0.89	Skewness	2.52
Mean of logged Data	2.514	SD of logged Data	0.569

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	21.33	95% Adjusted-CLT UCL (Chen-1995)	23.35
		95% Modified-t UCL (Johnson-1978)	21.71

Nonparametric Distribution Free UCLs

95% CLT UCL	20.92	95% Jackknife UCL	21.33
95% Standard Bootstrap UCL	20.78	95% Bootstrap-t UCL	54.79
95% Hall's Bootstrap UCL	53.18	95% Percentile Bootstrap UCL	20.98
95% BCA Bootstrap UCL	24.18		
90% Chebyshev(Mean, Sd) UCL	25.65	95% Chebyshev(Mean, Sd) UCL	30.39
97.5% Chebyshev(Mean, Sd) UCL	36.97	99% Chebyshev(Mean, Sd) UCL	49.89

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	30.39

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	23.7	Mean	35.44
Maximum	50.6	Median	38.5
SD	9.976	Std. Error of Mean	2.576
Coefficient of Variation	0.281	Skewness	0.154
Mean of logged Data	3.53	SD of logged Data	0.286

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.98	95% Adjusted-CLT UCL (Chen-1995)	39.79
		95% Modified-t UCL (Johnson-1978)	39.99

Nonparametric Distribution Free UCLs

95% CLT UCL	39.68	95% Jackknife UCL	39.98
95% Standard Bootstrap UCL	39.53	95% Bootstrap-t UCL	40.19
95% Hall's Bootstrap UCL	39.49	95% Percentile Bootstrap UCL	39.56
95% BCA Bootstrap UCL	39.75		
90% Chebyshev(Mean, Sd) UCL	43.17	95% Chebyshev(Mean, Sd) UCL	46.67
97.5% Chebyshev(Mean, Sd) UCL	51.53	99% Chebyshev(Mean, Sd) UCL	61.07

Suggested UCL to Use

95% Student's-t UCL	39.98	or 95% Modified-t UCL	39.99

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.0253	Mean	31.24

Maximum	127	Median	3.01
SD	42.7	Std. Error of Mean	11.02
Coefficient of Variation	1.367	Skewness	1.313
Mean of logged Data	1.87	SD of logged Data	2.356

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.66	95% Adjusted-CLT UCL (Chen-1995)	53.36
		95% Modified-t UCL (Johnson-1978)	51.28

Nonparametric Distribution Free UCLs

95% CLT UCL	49.37	95% Jackknife UCL	50.66
95% Standard Bootstrap UCL	48.71	95% Bootstrap-t UCL	59.23
95% Hall's Bootstrap UCL	50.48	95% Percentile Bootstrap UCL	49.85
95% BCA Bootstrap UCL	53.4		
90% Chebyshev(Mean, Sd) UCL	64.31	95% Chebyshev(Mean, Sd) UCL	79.29
97.5% Chebyshev(Mean, Sd) UCL	100.1	99% Chebyshev(Mean, Sd) UCL	140.9

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.0868	Mean	110.8
Maximum	484	Median	8.56
SD	153.3	Std. Error of Mean	39.59
Coefficient of Variation	1.384	Skewness	1.411
Mean of logged Data	2.939	SD of logged Data	2.525

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	180.5	95% Adjusted-CLT UCL (Chen-1995)	191.3
		95% Modified-t UCL (Johnson-1978)	182.9

Nonparametric Distribution Free UCLs

95% CLT UCL	175.9	95% Jackknife UCL	180.5
95% Standard Bootstrap UCL	173.2	95% Bootstrap-t UCL	211.8
95% Hall's Bootstrap UCL	182	95% Percentile Bootstrap UCL	177.5
95% BCA Bootstrap UCL	191.5		
90% Chebyshev(Mean, Sd) UCL	229.5	95% Chebyshev(Mean, Sd) UCL	283.3
97.5% Chebyshev(Mean, Sd) UCL	358	99% Chebyshev(Mean, Sd) UCL	504.7

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.593	Mean	649
Maximum	2440	Median	94.8
SD	809.2	Std. Error of Mean	208.9
Coefficient of Variation	1.247	Skewness	1.079
Mean of logged Data	4.857	SD of logged Data	2.467

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1017	95% Adjusted-CLT UCL (Chen-1995)	1055
		95% Modified-t UCL (Johnson-1978)	1027

Nonparametric Distribution Free UCLs

95% CLT UCL	992.7	95% Jackknife UCL	1017
95% Standard Bootstrap UCL	979.8	95% Bootstrap-t UCL	1119
95% Hall's Bootstrap UCL	1007	95% Percentile Bootstrap UCL	1005
95% BCA Bootstrap UCL	1009		
90% Chebyshev(Mean, Sd) UCL	1276	95% Chebyshev(Mean, Sd) UCL	1560
97.5% Chebyshev(Mean, Sd) UCL	1954	99% Chebyshev(Mean, Sd) UCL	2728

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.04	Mean	3050
Maximum	11300	Median	440
SD	3870	Std. Error of Mean	999.4
Coefficient of Variation	1.269	Skewness	1.112
Mean of logged Data	6.452	SD of logged Data	2.401

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4811	95% Adjusted-CLT UCL (Chen-1995)	5001
		95% Modified-t UCL (Johnson-1978)	4858

Nonparametric Distribution Free UCLs

95% CLT UCL	4694	95% Jackknife UCL	4811
95% Standard Bootstrap UCL	4634	95% Bootstrap-t UCL	5225

95% Hall's Bootstrap UCL	4951	95% Percentile Bootstrap UCL	4729
95% BCA Bootstrap UCL	4874		
90% Chebyshev(Mean, Sd) UCL	6048	95% Chebyshev(Mean, Sd) UCL	7406
97.5% Chebyshev(Mean, Sd) UCL	9291	99% Chebyshev(Mean, Sd) UCL	12994

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.17	Mean	3126
Maximum	11800	Median	404
SD	4051	Std. Error of Mean	1046
Coefficient of Variation	1.296	Skewness	1.16
Mean of logged Data	6.447	SD of logged Data	2.404

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4969	95% Adjusted-CLT UCL (Chen-1995)	5182
		95% Modified-t UCL (Johnson-1978)	5021

Nonparametric Distribution Free UCLs

95% CLT UCL	4847	95% Jackknife UCL	4969
95% Standard Bootstrap UCL	4824	95% Bootstrap-t UCL	5581
95% Hall's Bootstrap UCL	4986	95% Percentile Bootstrap UCL	4826
95% BCA Bootstrap UCL	5184		
90% Chebyshev(Mean, Sd) UCL	6264	95% Chebyshev(Mean, Sd) UCL	7686
97.5% Chebyshev(Mean, Sd) UCL	9659	99% Chebyshev(Mean, Sd) UCL	13534

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.5	Mean	4227
Maximum	15800	Median	798
SD	5398	Std. Error of Mean	1394
Coefficient of Variation	1.277	Skewness	1.141
Mean of logged Data	6.754	SD of logged Data	2.448

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6682	95% Adjusted-CLT UCL (Chen-1995)	6959
		95% Modified-t UCL (Johnson-1978)	6751

Nonparametric Distribution Free UCLs

95% CLT UCL	6520	95% Jackknife UCL	6682
95% Standard Bootstrap UCL	6424	95% Bootstrap-t UCL	7563
95% Hall's Bootstrap UCL	6772	95% Percentile Bootstrap UCL	6484
95% BCA Bootstrap UCL	6662		
90% Chebyshev(Mean, Sd) UCL	8409	95% Chebyshev(Mean, Sd) UCL	10303
97.5% Chebyshev(Mean, Sd) UCL	12932	99% Chebyshev(Mean, Sd) UCL	18096

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.95	Mean	2065
Maximum	7430	Median	257
SD	2650	Std. Error of Mean	684.3
Coefficient of Variation	1.283	Skewness	1.065
Mean of logged Data	6.005	SD of logged Data	2.434

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3270	95% Adjusted-CLT UCL (Chen-1995)	3392
		95% Modified-t UCL (Johnson-1978)	3302

Nonparametric Distribution Free UCLs

95% CLT UCL	3190	95% Jackknife UCL	3270
95% Standard Bootstrap UCL	3145	95% Bootstrap-t UCL	3635
95% Hall's Bootstrap UCL	3213	95% Percentile Bootstrap UCL	3153
95% BCA Bootstrap UCL	3331		
90% Chebyshev(Mean, Sd) UCL	4118	95% Chebyshev(Mean, Sd) UCL	5048
97.5% Chebyshev(Mean, Sd) UCL	6338	99% Chebyshev(Mean, Sd) UCL	8873

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.41	Mean	1620
Maximum	5830	Median	208
SD	2059	Std. Error of Mean	531.6
Coefficient of Variation	1.271	Skewness	1.059
Mean of logged Data	5.753	SD of logged Data	2.465

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2556	95% Adjusted-CLT UCL (Chen-1995)	2649
		95% Modified-t UCL (Johnson-1978)	2580

Nonparametric Distribution Free UCLs

95% CLT UCL	2494	95% Jackknife UCL	2556
95% Standard Bootstrap UCL	2437	95% Bootstrap-t UCL	2810
95% Hall's Bootstrap UCL	2541	95% Percentile Bootstrap UCL	2494
95% BCA Bootstrap UCL	2619		
90% Chebyshev(Mean, Sd) UCL	3214	95% Chebyshev(Mean, Sd) UCL	3937
97.5% Chebyshev(Mean, Sd) UCL	4940	99% Chebyshev(Mean, Sd) UCL	6909

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.23	Mean	3641
Maximum	13200	Median	736
SD	4548	Std. Error of Mean	1174
Coefficient of Variation	1.249	Skewness	1.057
Mean of logged Data	6.618	SD of logged Data	2.444

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5709	95% Adjusted-CLT UCL (Chen-1995)	5915
		95% Modified-t UCL (Johnson-1978)	5762

Nonparametric Distribution Free UCLs

95% CLT UCL	5572	95% Jackknife UCL	5709
95% Standard Bootstrap UCL	5504	95% Bootstrap-t UCL	6231
95% Hall's Bootstrap UCL	5701	95% Percentile Bootstrap UCL	5497
95% BCA Bootstrap UCL	5902		
90% Chebyshev(Mean, Sd) UCL	7164	95% Chebyshev(Mean, Sd) UCL	8759
97.5% Chebyshev(Mean, Sd) UCL	10974	99% Chebyshev(Mean, Sd) UCL	15325

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.555	Mean	489.5
Maximum	2040	Median	60.6
SD	679.2	Std. Error of Mean	175.4
Coefficient of Variation	1.387	Skewness	1.416
Mean of logged Data	4.496	SD of logged Data	2.472

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	798.4	95% Adjusted-CLT UCL (Chen-1995)	846.5
		95% Modified-t UCL (Johnson-1978)	809.1

Nonparametric Distribution Free UCLs

95% CLT UCL	778	95% Jackknife UCL	798.4
95% Standard Bootstrap UCL	768.6	95% Bootstrap-t UCL	949
95% Hall's Bootstrap UCL	900.1	95% Percentile Bootstrap UCL	793.2
95% BCA Bootstrap UCL	842.3		
90% Chebyshev(Mean, Sd) UCL	1016	95% Chebyshev(Mean, Sd) UCL	1254
97.5% Chebyshev(Mean, Sd) UCL	1585	99% Chebyshev(Mean, Sd) UCL	2234

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	5.4	Mean	6358
Maximum	22800	Median	1260
SD	7836	Std. Error of Mean	2023
Coefficient of Variation	1.233	Skewness	1.038
Mean of logged Data	7.212	SD of logged Data	2.431

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9922	95% Adjusted-CLT UCL (Chen-1995)	10266
		95% Modified-t UCL (Johnson-1978)	10012

Nonparametric Distribution Free UCLs

95% CLT UCL	9686	95% Jackknife UCL	9922
95% Standard Bootstrap UCL	9611	95% Bootstrap-t UCL	10855
95% Hall's Bootstrap UCL	9768	95% Percentile Bootstrap UCL	9580
95% BCA Bootstrap UCL	10394		
90% Chebyshev(Mean, Sd) UCL	12428	95% Chebyshev(Mean, Sd) UCL	15178
97.5% Chebyshev(Mean, Sd) UCL	18994	99% Chebyshev(Mean, Sd) UCL	26490

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.0548	Mean	62.36
Maximum	245	Median	10.3
SD	81.84	Std. Error of Mean	21.13
Coefficient of Variation	1.312	Skewness	1.308
Mean of logged Data	2.463	SD of logged Data	2.49

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	99.58	95% Adjusted-CLT UCL (Chen-1995)	104.7
		95% Modified-t UCL (Johnson-1978)	100.8

Nonparametric Distribution Free UCLs

95% CLT UCL	97.12	95% Jackknife UCL	99.58
95% Standard Bootstrap UCL	96.25	95% Bootstrap-t UCL	116.2
95% Hall's Bootstrap UCL	110.5	95% Percentile Bootstrap UCL	99.46
95% BCA Bootstrap UCL	105.3		
90% Chebyshev(Mean, Sd) UCL	125.8	95% Chebyshev(Mean, Sd) UCL	154.5
97.5% Chebyshev(Mean, Sd) UCL	194.3	99% Chebyshev(Mean, Sd) UCL	272.6

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.25	Mean	2487
Maximum	9170	Median	301
SD	3216	Std. Error of Mean	830.3

Coefficient of Variation	1.293	Skewness	1.105
Mean of logged Data	6.16	SD of logged Data	2.459

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3950	95% Adjusted-CLT UCL (Chen-1995)	4106
		95% Modified-t UCL (Johnson-1978)	3989

Nonparametric Distribution Free UCLs

95% CLT UCL	3853	95% Jackknife UCL	3950
95% Standard Bootstrap UCL	3782	95% Bootstrap-t UCL	4510
95% Hall's Bootstrap UCL	3951	95% Percentile Bootstrap UCL	3891
95% BCA Bootstrap UCL	4100		
90% Chebyshev(Mean, Sd) UCL	4978	95% Chebyshev(Mean, Sd) UCL	6106
97.5% Chebyshev(Mean, Sd) UCL	7673	99% Chebyshev(Mean, Sd) UCL	10749

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.0803	Mean	96.24
Maximum	450	Median	7.46
SD	140	Std. Error of Mean	36.15
Coefficient of Variation	1.455	Skewness	1.575
Mean of logged Data	2.76	SD of logged Data	2.516

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	159.9	95% Adjusted-CLT UCL (Chen-1995)	171.4
		95% Modified-t UCL (Johnson-1978)	162.4

Nonparametric Distribution Free UCLs

95% CLT UCL	155.7	95% Jackknife UCL	159.9
95% Standard Bootstrap UCL	154.1	95% Bootstrap-t UCL	190.5
95% Hall's Bootstrap UCL	173.9	95% Percentile Bootstrap UCL	155.9
95% BCA Bootstrap UCL	168.2		
90% Chebyshev(Mean, Sd) UCL	204.7	95% Chebyshev(Mean, Sd) UCL	253.8
97.5% Chebyshev(Mean, Sd) UCL	322	99% Chebyshev(Mean, Sd) UCL	456

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.75	Mean	3454
Maximum	12300	Median	395
SD	4251	Std. Error of Mean	1098
Coefficient of Variation	1.231	Skewness	0.954
Mean of logged Data	6.473	SD of logged Data	2.522

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5387	95% Adjusted-CLT UCL (Chen-1995)	5549
		95% Modified-t UCL (Johnson-1978)	5433

Nonparametric Distribution Free UCLs

95% CLT UCL	5260	95% Jackknife UCL	5387
95% Standard Bootstrap UCL	5196	95% Bootstrap-t UCL	5863
95% Hall's Bootstrap UCL	5282	95% Percentile Bootstrap UCL	5136
95% BCA Bootstrap UCL	5403		
90% Chebyshev(Mean, Sd) UCL	6747	95% Chebyshev(Mean, Sd) UCL	8239
97.5% Chebyshev(Mean, Sd) UCL	10309	99% Chebyshev(Mean, Sd) UCL	14376

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	4.74	Mean	5559
Maximum	20100	Median	1110
SD	6891	Std. Error of Mean	1779
Coefficient of Variation	1.24	Skewness	1.056
Mean of logged Data	7.08	SD of logged Data	2.424

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8693	95% Adjusted-CLT UCL (Chen-1995)	9004
		95% Modified-t UCL (Johnson-1978)	8774

Nonparametric Distribution Free UCLs

95% CLT UCL	8486	95% Jackknife UCL	8693
95% Standard Bootstrap UCL	8368	95% Bootstrap-t UCL	9647
95% Hall's Bootstrap UCL	8602	95% Percentile Bootstrap UCL	8580
95% BCA Bootstrap UCL	9039		

90% Chebyshev(Mean, Sd) UCL	10897	95% Chebyshev(Mean, Sd) UCL	13315
97.5% Chebyshev(Mean, Sd) UCL	16671	99% Chebyshev(Mean, Sd) UCL	23263

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:30:38 PM
From File	36028_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.6	Mean	25.1
Maximum	52.9	Median	14.1
SD	16.8	Std. Error of Mean	5.599
Coefficient of Variation	0.669	Skewness	0.969
Mean of logged Data	3.042	SD of logged Data	0.617

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.51	95% Adjusted-CLT UCL (Chen-1995)	36.24
		95% Modified-t UCL (Johnson-1978)	35.81

Nonparametric Distribution Free UCLs

95% CLT UCL	34.31	95% Jackknife UCL	35.51
95% Standard Bootstrap UCL	33.64	95% Bootstrap-t UCL	40.81
95% Hall's Bootstrap UCL	32.13	95% Percentile Bootstrap UCL	34.42
95% BCA Bootstrap UCL	34.66		
90% Chebyshev(Mean, Sd) UCL	41.9	95% Chebyshev(Mean, Sd) UCL	49.5
97.5% Chebyshev(Mean, Sd) UCL	60.06	99% Chebyshev(Mean, Sd) UCL	80.8

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	49.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.4	Mean	12.41
Maximum	14.2	Median	12.6
SD	1.275	Std. Error of Mean	0.425
Coefficient of Variation	0.103	Skewness	-0.416
Mean of logged Data	2.514	SD of logged Data	0.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.2	95% Adjusted-CLT UCL (Chen-1995)	13.05
		95% Modified-t UCL (Johnson-1978)	13.19

Nonparametric Distribution Free UCLs

95% CLT UCL	13.11	95% Jackknife UCL	13.2
95% Standard Bootstrap UCL	13.04	95% Bootstrap-t UCL	13.11
95% Hall's Bootstrap UCL	13.05	95% Percentile Bootstrap UCL	13.04
95% BCA Bootstrap UCL	13.01		
90% Chebyshev(Mean, Sd) UCL	13.69	95% Chebyshev(Mean, Sd) UCL	14.26
97.5% Chebyshev(Mean, Sd) UCL	15.07	99% Chebyshev(Mean, Sd) UCL	16.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	39.8	Mean	43.26
Maximum	46.4	Median	43.1
SD	2.181	Std. Error of Mean	0.727
Coefficient of Variation	0.0504	Skewness	0.0498
Mean of logged Data	3.766	SD of logged Data	0.0505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.61	95% Adjusted-CLT UCL (Chen-1995)	44.46
		95% Modified-t UCL (Johnson-1978)	44.61

Nonparametric Distribution Free UCLs

95% CLT UCL	44.45	95% Jackknife UCL	44.61
95% Standard Bootstrap UCL	44.4	95% Bootstrap-t UCL	44.61
95% Hall's Bootstrap UCL	44.58	95% Percentile Bootstrap UCL	44.34
95% BCA Bootstrap UCL	44.33		
90% Chebyshev(Mean, Sd) UCL	45.44	95% Chebyshev(Mean, Sd) UCL	46.42
97.5% Chebyshev(Mean, Sd) UCL	47.8	99% Chebyshev(Mean, Sd) UCL	50.49

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.656	Mean	1.617
Maximum	4.61	Median	1.1
SD	1.251	Std. Error of Mean	0.417
Coefficient of Variation	0.774	Skewness	1.984
Mean of logged Data	0.274	SD of logged Data	0.647

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.392	95% Adjusted-CLT UCL (Chen-1995)	2.597
		95% Modified-t UCL (Johnson-1978)	2.438

Nonparametric Distribution Free UCLs

95% CLT UCL	2.303	95% Jackknife UCL	2.392
95% Standard Bootstrap UCL	2.29	95% Bootstrap-t UCL	3.01
95% Hall's Bootstrap UCL	4.802	95% Percentile Bootstrap UCL	2.323
95% BCA Bootstrap UCL	2.688		
90% Chebyshev(Mean, Sd) UCL	2.868	95% Chebyshev(Mean, Sd) UCL	3.434
97.5% Chebyshev(Mean, Sd) UCL	4.221	99% Chebyshev(Mean, Sd) UCL	5.766

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.511	Mean	0.954
Maximum	2.41	Median	0.748
SD	0.581	Std. Error of Mean	0.194
Coefficient of Variation	0.609	Skewness	2.366
Mean of logged Data	-0.161	SD of logged Data	0.468

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.315	95% Adjusted-CLT UCL (Chen-1995)	1.436
		95% Modified-t UCL (Johnson-1978)	1.34

Nonparametric Distribution Free UCLs

95% CLT UCL	1.273	95% Jackknife UCL	1.315
95% Standard Bootstrap UCL	1.252	95% Bootstrap-t UCL	1.955
95% Hall's Bootstrap UCL	2.637	95% Percentile Bootstrap UCL	1.291
95% BCA Bootstrap UCL	1.415		
90% Chebyshev(Mean, Sd) UCL	1.536	95% Chebyshev(Mean, Sd) UCL	1.799
97.5% Chebyshev(Mean, Sd) UCL	2.164	99% Chebyshev(Mean, Sd) UCL	2.882

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.69	Mean	3.439
Maximum	5.63	Median	3.83
SD	1.234	Std. Error of Mean	0.411
Coefficient of Variation	0.359	Skewness	0.266
Mean of logged Data	1.173	SD of logged Data	0.383

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.204	95% Adjusted-CLT UCL (Chen-1995)	4.154
		95% Modified-t UCL (Johnson-1978)	4.21

Nonparametric Distribution Free UCLs

95% CLT UCL	4.115	95% Jackknife UCL	4.204
95% Standard Bootstrap UCL	4.082	95% Bootstrap-t UCL	4.219
95% Hall's Bootstrap UCL	4.209	95% Percentile Bootstrap UCL	4.056
95% BCA Bootstrap UCL	4.138		
90% Chebyshev(Mean, Sd) UCL	4.673	95% Chebyshev(Mean, Sd) UCL	5.232
97.5% Chebyshev(Mean, Sd) UCL	6.007	99% Chebyshev(Mean, Sd) UCL	7.531

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.1	Mean	23.3
Maximum	30.9	Median	24.6
SD	5.557	Std. Error of Mean	1.852
Coefficient of Variation	0.238	Skewness	-0.526
Mean of logged Data	3.12	SD of logged Data	0.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.74	95% Adjusted-CLT UCL (Chen-1995)	26
		95% Modified-t UCL (Johnson-1978)	26.69

Nonparametric Distribution Free UCLs

95% CLT UCL	26.35	95% Jackknife UCL	26.74
95% Standard Bootstrap UCL	26.26	95% Bootstrap-t UCL	26.42
95% Hall's Bootstrap UCL	25.98	95% Percentile Bootstrap UCL	26.08
95% BCA Bootstrap UCL	25.74		
90% Chebyshev(Mean, Sd) UCL	28.86	95% Chebyshev(Mean, Sd) UCL	31.37
97.5% Chebyshev(Mean, Sd) UCL	34.87	99% Chebyshev(Mean, Sd) UCL	41.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	17.5	Mean	30.94
Maximum	37.9	Median	34.7
SD	7.289	Std. Error of Mean	2.43
Coefficient of Variation	0.236	Skewness	-0.784
Mean of logged Data	3.403	SD of logged Data	0.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.46	95% Adjusted-CLT UCL (Chen-1995)	34.26
		95% Modified-t UCL (Johnson-1978)	35.36

Nonparametric Distribution Free UCLs

95% CLT UCL	34.94	95% Jackknife UCL	35.46
95% Standard Bootstrap UCL	34.59	95% Bootstrap-t UCL	34.88
95% Hall's Bootstrap UCL	34.08	95% Percentile Bootstrap UCL	34.73
95% BCA Bootstrap UCL	34.24		
90% Chebyshev(Mean, Sd) UCL	38.23	95% Chebyshev(Mean, Sd) UCL	41.54
97.5% Chebyshev(Mean, Sd) UCL	46.12	99% Chebyshev(Mean, Sd) UCL	55.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	22.1	Mean	38.6
Maximum	47.8	Median	41.9
SD	8.752	Std. Error of Mean	2.917
Coefficient of Variation	0.227	Skewness	-0.73
Mean of logged Data	3.627	SD of logged Data	0.254

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.03	95% Adjusted-CLT UCL (Chen-1995)	42.64
		95% Modified-t UCL (Johnson-1978)	43.91

Nonparametric Distribution Free UCLs

95% CLT UCL	43.4	95% Jackknife UCL	44.03
95% Standard Bootstrap UCL	43.07	95% Bootstrap-t UCL	43.56
95% Hall's Bootstrap UCL	42.66	95% Percentile Bootstrap UCL	42.81
95% BCA Bootstrap UCL	42.7		
90% Chebyshev(Mean, Sd) UCL	47.35	95% Chebyshev(Mean, Sd) UCL	51.32
97.5% Chebyshev(Mean, Sd) UCL	56.82	99% Chebyshev(Mean, Sd) UCL	67.63

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.1	Mean	21.94
Maximum	27.5	Median	24.7
SD	5.207	Std. Error of Mean	1.736
Coefficient of Variation	0.237	Skewness	-0.889
Mean of logged Data	3.059	SD of logged Data	0.271

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.17	95% Adjusted-CLT UCL (Chen-1995)	24.25
		95% Modified-t UCL (Johnson-1978)	25.09

Nonparametric Distribution Free UCLs

95% CLT UCL	24.8	95% Jackknife UCL	25.17
95% Standard Bootstrap UCL	24.6	95% Bootstrap-t UCL	24.51
95% Hall's Bootstrap UCL	24.19	95% Percentile Bootstrap UCL	24.66
95% BCA Bootstrap UCL	24.21		
90% Chebyshev(Mean, Sd) UCL	27.15	95% Chebyshev(Mean, Sd) UCL	29.51
97.5% Chebyshev(Mean, Sd) UCL	32.78	99% Chebyshev(Mean, Sd) UCL	39.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.24	Mean	15.88
Maximum	19.8	Median	16.7
SD	3.625	Std. Error of Mean	1.208
Coefficient of Variation	0.228	Skewness	-0.611

Mean of logged Data	2.739	SD of logged Data	0.252

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.13	95% Adjusted-CLT UCL (Chen-1995)	17.61
		95% Modified-t UCL (Johnson-1978)	18.09

Nonparametric Distribution Free UCLs

95% CLT UCL	17.87	95% Jackknife UCL	18.13
95% Standard Bootstrap UCL	17.77	95% Bootstrap-t UCL	17.92
95% Hall's Bootstrap UCL	17.52	95% Percentile Bootstrap UCL	17.67
95% BCA Bootstrap UCL	17.6		
90% Chebyshev(Mean, Sd) UCL	19.51	95% Chebyshev(Mean, Sd) UCL	21.15
97.5% Chebyshev(Mean, Sd) UCL	23.43	99% Chebyshev(Mean, Sd) UCL	27.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	17.1	Mean	30.56
Maximum	37.8	Median	32.9
SD	7.17	Std. Error of Mean	2.39
Coefficient of Variation	0.235	Skewness	-0.811
Mean of logged Data	3.391	SD of logged Data	0.266

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35	95% Adjusted-CLT UCL (Chen-1995)	33.8
		95% Modified-t UCL (Johnson-1978)	34.89

Nonparametric Distribution Free UCLs

95% CLT UCL	34.49	95% Jackknife UCL	35
95% Standard Bootstrap UCL	34.2	95% Bootstrap-t UCL	34.41
95% Hall's Bootstrap UCL	33.67	95% Percentile Bootstrap UCL	33.99
95% BCA Bootstrap UCL	33.8		

90% Chebyshev(Mean, Sd) UCL	37.73	95% Chebyshev(Mean, Sd) UCL	40.97
97.5% Chebyshev(Mean, Sd) UCL	45.48	99% Chebyshev(Mean, Sd) UCL	54.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.86	Mean	5.284
Maximum	6.32	Median	5.88
SD	1.211	Std. Error of Mean	0.404
Coefficient of Variation	0.229	Skewness	-1.215
Mean of logged Data	1.636	SD of logged Data	0.27

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.035	95% Adjusted-CLT UCL (Chen-1995)	5.774
		95% Modified-t UCL (Johnson-1978)	6.008

Nonparametric Distribution Free UCLs

95% CLT UCL	5.949	95% Jackknife UCL	6.035
95% Standard Bootstrap UCL	5.911	95% Bootstrap-t UCL	5.878
95% Hall's Bootstrap UCL	5.765	95% Percentile Bootstrap UCL	5.88
95% BCA Bootstrap UCL	5.826		
90% Chebyshev(Mean, Sd) UCL	6.496	95% Chebyshev(Mean, Sd) UCL	7.044
97.5% Chebyshev(Mean, Sd) UCL	7.806	99% Chebyshev(Mean, Sd) UCL	9.302

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	24.1	Mean	42.8
Maximum	59.3	Median	42.6
SD	11.26	Std. Error of Mean	3.753
Coefficient of Variation	0.263	Skewness	-0.133
Mean of logged Data	3.723	SD of logged Data	0.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.78	95% Adjusted-CLT UCL (Chen-1995)	48.79
		95% Modified-t UCL (Johnson-1978)	49.75

Nonparametric Distribution Free UCLs

95% CLT UCL	48.97	95% Jackknife UCL	49.78
95% Standard Bootstrap UCL	48.62	95% Bootstrap-t UCL	49.42
95% Hall's Bootstrap UCL	50.19	95% Percentile Bootstrap UCL	48.44
95% BCA Bootstrap UCL	48.32		
90% Chebyshev(Mean, Sd) UCL	54.06	95% Chebyshev(Mean, Sd) UCL	59.16
97.5% Chebyshev(Mean, Sd) UCL	66.23	99% Chebyshev(Mean, Sd) UCL	80.14

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.25	Mean	1.381
Maximum	2.02	Median	1.31
SD	0.241	Std. Error of Mean	0.0802
Coefficient of Variation	0.174	Skewness	2.955
Mean of logged Data	0.312	SD of logged Data	0.148

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.53	95% Adjusted-CLT UCL (Chen-1995)	1.597
		95% Modified-t UCL (Johnson-1978)	1.543

Nonparametric Distribution Free UCLs

95% CLT UCL	1.513	95% Jackknife UCL	1.53
95% Standard Bootstrap UCL	1.504	95% Bootstrap-t UCL	3.26
95% Hall's Bootstrap UCL	2.717	95% Percentile Bootstrap UCL	1.536
95% BCA Bootstrap UCL	1.549		
90% Chebyshev(Mean, Sd) UCL	1.621	95% Chebyshev(Mean, Sd) UCL	1.73
97.5% Chebyshev(Mean, Sd) UCL	1.882	99% Chebyshev(Mean, Sd) UCL	2.179

Suggested UCL to Use

95% Student's-t UCL	1.53	or 95% Modified-t UCL	1.543

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.8	Mean	24
Maximum	29.6	Median	26.4
SD	5.318	Std. Error of Mean	1.773
Coefficient of Variation	0.222	Skewness	-0.894
Mean of logged Data	3.152	SD of logged Data	0.251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.3	95% Adjusted-CLT UCL (Chen-1995)	26.35
		95% Modified-t UCL (Johnson-1978)	27.21

Nonparametric Distribution Free UCLs

95% CLT UCL	26.92	95% Jackknife UCL	27.3
95% Standard Bootstrap UCL	26.72	95% Bootstrap-t UCL	26.93
95% Hall's Bootstrap UCL	26.31	95% Percentile Bootstrap UCL	26.58
95% BCA Bootstrap UCL	26.54		
90% Chebyshev(Mean, Sd) UCL	29.32	95% Chebyshev(Mean, Sd) UCL	31.73
97.5% Chebyshev(Mean, Sd) UCL	35.07	99% Chebyshev(Mean, Sd) UCL	41.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.29	Mean	2.223
Maximum	6.64	Median	1.65
SD	1.689	Std. Error of Mean	0.563
Coefficient of Variation	0.76	Skewness	2.781
Mean of logged Data	0.649	SD of logged Data	0.507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.27	95% Adjusted-CLT UCL (Chen-1995)	3.707
		95% Modified-t UCL (Johnson-1978)	3.357

Nonparametric Distribution Free UCLs

95% CLT UCL	3.15	95% Jackknife UCL	3.27
95% Standard Bootstrap UCL	3.107	95% Bootstrap-t UCL	6.074
95% Hall's Bootstrap UCL	6.859	95% Percentile Bootstrap UCL	3.279
95% BCA Bootstrap UCL	3.793		
90% Chebyshev(Mean, Sd) UCL	3.913	95% Chebyshev(Mean, Sd) UCL	4.678
97.5% Chebyshev(Mean, Sd) UCL	5.74	99% Chebyshev(Mean, Sd) UCL	7.826

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.678

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.1	Mean	21.96
Maximum	36.1	Median	21.8
SD	7.732	Std. Error of Mean	2.577
Coefficient of Variation	0.352	Skewness	0.344
Mean of logged Data	3.03	SD of logged Data	0.375

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.75	95% Adjusted-CLT UCL (Chen-1995)	26.51
		95% Modified-t UCL (Johnson-1978)	26.8

Nonparametric Distribution Free UCLs

95% CLT UCL	26.19	95% Jackknife UCL	26.75
95% Standard Bootstrap UCL	25.92	95% Bootstrap-t UCL	26.8
95% Hall's Bootstrap UCL	27.39	95% Percentile Bootstrap UCL	25.92
95% BCA Bootstrap UCL	26.26		
90% Chebyshev(Mean, Sd) UCL	29.69	95% Chebyshev(Mean, Sd) UCL	33.19
97.5% Chebyshev(Mean, Sd) UCL	38.05	99% Chebyshev(Mean, Sd) UCL	47.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	24.1	Mean	42.27
Maximum	57.4	Median	42.9
SD	10.56	Std. Error of Mean	3.521
Coefficient of Variation	0.25	Skewness	-0.272
Mean of logged Data	3.713	SD of logged Data	0.271

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	48.82	95% Adjusted-CLT UCL (Chen-1995)	47.72
		95% Modified-t UCL (Johnson-1978)	48.76

Nonparametric Distribution Free UCLs

95% CLT UCL	48.06	95% Jackknife UCL	48.82
95% Standard Bootstrap UCL	47.71	95% Bootstrap-t UCL	48.32
95% Hall's Bootstrap UCL	47.81	95% Percentile Bootstrap UCL	47.88
95% BCA Bootstrap UCL	47.8		
90% Chebyshev(Mean, Sd) UCL	52.83	95% Chebyshev(Mean, Sd) UCL	57.62
97.5% Chebyshev(Mean, Sd) UCL	64.26	99% Chebyshev(Mean, Sd) UCL	77.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:32:14 PM
From File	36030_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12	Mean	14.13
Maximum	15.9	Median	14.6
SD	1.475	Std. Error of Mean	0.492
Coefficient of Variation	0.104	Skewness	-0.246
Mean of logged Data	2.644	SD of logged Data	0.106

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.05	95% Adjusted-CLT UCL (Chen-1995)	14.9
		95% Modified-t UCL (Johnson-1978)	15.04

Nonparametric Distribution Free UCLs

95% CLT UCL	14.94	95% Jackknife UCL	15.05
95% Standard Bootstrap UCL	14.89	95% Bootstrap-t UCL	15.06
95% Hall's Bootstrap UCL	14.82	95% Percentile Bootstrap UCL	14.9
95% BCA Bootstrap UCL	14.9		
90% Chebyshev(Mean, Sd) UCL	15.61	95% Chebyshev(Mean, Sd) UCL	16.28
97.5% Chebyshev(Mean, Sd) UCL	17.2	99% Chebyshev(Mean, Sd) UCL	19.02

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.84	Mean	11.48
Maximum	13.2	Median	11.6
SD	1.073	Std. Error of Mean	0.358
Coefficient of Variation	0.0934	Skewness	-0.0548

Mean of logged Data	2.437	SD of logged Data	0.0942

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.15	95% Adjusted-CLT UCL (Chen-1995)	12.06
		95% Modified-t UCL (Johnson-1978)	12.15

Nonparametric Distribution Free UCLs

95% CLT UCL	12.07	95% Jackknife UCL	12.15
95% Standard Bootstrap UCL	12.05	95% Bootstrap-t UCL	12.14
95% Hall's Bootstrap UCL	12.12	95% Percentile Bootstrap UCL	12.03
95% BCA Bootstrap UCL	12.02		
90% Chebyshev(Mean, Sd) UCL	12.55	95% Chebyshev(Mean, Sd) UCL	13.04
97.5% Chebyshev(Mean, Sd) UCL	13.71	99% Chebyshev(Mean, Sd) UCL	15.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	41.1	Mean	47.91
Maximum	54.8	Median	47.1
SD	5.28	Std. Error of Mean	1.76
Coefficient of Variation	0.11	Skewness	0.0227
Mean of logged Data	3.864	SD of logged Data	0.111

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.18	95% Adjusted-CLT UCL (Chen-1995)	50.82
		95% Modified-t UCL (Johnson-1978)	51.19

Nonparametric Distribution Free UCLs

95% CLT UCL	50.81	95% Jackknife UCL	51.18
95% Standard Bootstrap UCL	50.67	95% Bootstrap-t UCL	51.28
95% Hall's Bootstrap UCL	50.33	95% Percentile Bootstrap UCL	50.71
95% BCA Bootstrap UCL	50.57		

90% Chebyshev(Mean, Sd) UCL	53.19	95% Chebyshev(Mean, Sd) UCL	55.58
97.5% Chebyshev(Mean, Sd) UCL	58.9	99% Chebyshev(Mean, Sd) UCL	65.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.693	Mean	1.014
Maximum	2	Median	0.904
SD	0.393	Std. Error of Mean	0.131
Coefficient of Variation	0.388	Skewness	2.372
Mean of logged Data	-0.0355	SD of logged Data	0.311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.258	95% Adjusted-CLT UCL (Chen-1995)	1.34
		95% Modified-t UCL (Johnson-1978)	1.275

Nonparametric Distribution Free UCLs

95% CLT UCL	1.23	95% Jackknife UCL	1.258
95% Standard Bootstrap UCL	1.216	95% Bootstrap-t UCL	1.636
95% Hall's Bootstrap UCL	2.147	95% Percentile Bootstrap UCL	1.245
95% BCA Bootstrap UCL	1.303		
90% Chebyshev(Mean, Sd) UCL	1.407	95% Chebyshev(Mean, Sd) UCL	1.585
97.5% Chebyshev(Mean, Sd) UCL	1.832	99% Chebyshev(Mean, Sd) UCL	2.318

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.515	Mean	0.523
Maximum	0.535	Median	0.525
SD	0.00795	Std. Error of Mean	0.00265
Coefficient of Variation	0.0152	Skewness	0.23
Mean of logged Data	-0.649	SD of logged Data	0.0152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.528	95% Adjusted-CLT UCL (Chen-1995)	0.527
		95% Modified-t UCL (Johnson-1978)	0.528

Nonparametric Distribution Free UCLs

95% CLT UCL	0.527	95% Jackknife UCL	0.528
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.531	95% Chebyshev(Mean, Sd) UCL	0.534
97.5% Chebyshev(Mean, Sd) UCL	0.539	99% Chebyshev(Mean, Sd) UCL	0.549

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.44	Mean	2.179
Maximum	3.13	Median	2.14
SD	0.548	Std. Error of Mean	0.183
Coefficient of Variation	0.252	Skewness	0.484
Mean of logged Data	0.751	SD of logged Data	0.253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.519	95% Adjusted-CLT UCL (Chen-1995)	2.512
		95% Modified-t UCL (Johnson-1978)	2.524

Nonparametric Distribution Free UCLs

95% CLT UCL	2.48	95% Jackknife UCL	2.519
95% Standard Bootstrap UCL	2.462	95% Bootstrap-t UCL	2.622
95% Hall's Bootstrap UCL	2.89	95% Percentile Bootstrap UCL	2.453
95% BCA Bootstrap UCL	2.503		
90% Chebyshev(Mean, Sd) UCL	2.728	95% Chebyshev(Mean, Sd) UCL	2.976
97.5% Chebyshev(Mean, Sd) UCL	3.321	99% Chebyshev(Mean, Sd) UCL	3.998

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.53	Mean	12.08
Maximum	25.9	Median	9.61
SD	8.444	Std. Error of Mean	2.815
Coefficient of Variation	0.699	Skewness	0.761
Mean of logged Data	2.246	SD of logged Data	0.78

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.31	95% Adjusted-CLT UCL (Chen-1995)	17.47
		95% Modified-t UCL (Johnson-1978)	17.43

Nonparametric Distribution Free UCLs

95% CLT UCL	16.71	95% Jackknife UCL	17.31
95% Standard Bootstrap UCL	16.36	95% Bootstrap-t UCL	19.13
95% Hall's Bootstrap UCL	19.48	95% Percentile Bootstrap UCL	16.59
95% BCA Bootstrap UCL	17.01		
90% Chebyshev(Mean, Sd) UCL	20.52	95% Chebyshev(Mean, Sd) UCL	24.35
97.5% Chebyshev(Mean, Sd) UCL	29.66	99% Chebyshev(Mean, Sd) UCL	40.09

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.19	Mean	15.07
Maximum	31.6	Median	9.97
SD	10.47	Std. Error of Mean	3.49
Coefficient of Variation	0.695	Skewness	0.684
Mean of logged Data	2.469	SD of logged Data	0.775

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.56	95% Adjusted-CLT UCL (Chen-1995)	21.66
		95% Modified-t UCL (Johnson-1978)	21.69

Nonparametric Distribution Free UCLs

95% CLT UCL	20.81	95% Jackknife UCL	21.56
95% Standard Bootstrap UCL	20.54	95% Bootstrap-t UCL	23.39
95% Hall's Bootstrap UCL	22.43	95% Percentile Bootstrap UCL	20.64
95% BCA Bootstrap UCL	21.37		
90% Chebyshev(Mean, Sd) UCL	25.54	95% Chebyshev(Mean, Sd) UCL	30.28
97.5% Chebyshev(Mean, Sd) UCL	36.87	99% Chebyshev(Mean, Sd) UCL	49.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.7	Mean	20.94
Maximum	42.9	Median	14.8
SD	14.02	Std. Error of Mean	4.672
Coefficient of Variation	0.669	Skewness	0.667
Mean of logged Data	2.817	SD of logged Data	0.744

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.63	95% Adjusted-CLT UCL (Chen-1995)	29.73
		95% Modified-t UCL (Johnson-1978)	29.8

Nonparametric Distribution Free UCLs

95% CLT UCL	28.62	95% Jackknife UCL	29.63
95% Standard Bootstrap UCL	28.34	95% Bootstrap-t UCL	33.12
95% Hall's Bootstrap UCL	30.9	95% Percentile Bootstrap UCL	28.13
95% BCA Bootstrap UCL	30.02		
90% Chebyshev(Mean, Sd) UCL	34.95	95% Chebyshev(Mean, Sd) UCL	41.3
97.5% Chebyshev(Mean, Sd) UCL	50.11	99% Chebyshev(Mean, Sd) UCL	67.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.67	Mean	11.68
Maximum	24.1	Median	7.66
SD	8.071	Std. Error of Mean	2.69
Coefficient of Variation	0.691	Skewness	0.722
Mean of logged Data	2.223	SD of logged Data	0.754

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.68	95% Adjusted-CLT UCL (Chen-1995)	16.79
		95% Modified-t UCL (Johnson-1978)	16.79

Nonparametric Distribution Free UCLs

95% CLT UCL	16.1	95% Jackknife UCL	16.68
95% Standard Bootstrap UCL	15.95	95% Bootstrap-t UCL	18.9
95% Hall's Bootstrap UCL	17.5	95% Percentile Bootstrap UCL	16.02
95% BCA Bootstrap UCL	16.52		
90% Chebyshev(Mean, Sd) UCL	19.75	95% Chebyshev(Mean, Sd) UCL	23.4
97.5% Chebyshev(Mean, Sd) UCL	28.48	99% Chebyshev(Mean, Sd) UCL	38.45

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.16	Mean	7.356
Maximum	17.2	Median	5.05
SD	5.856	Std. Error of Mean	1.952
Coefficient of Variation	0.796	Skewness	1.033
Mean of logged Data	1.718	SD of logged Data	0.789

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.99	95% Adjusted-CLT UCL (Chen-1995)	11.29
		95% Modified-t UCL (Johnson-1978)	11.1

Nonparametric Distribution Free UCLs

95% CLT UCL	10.57	95% Jackknife UCL	10.99
95% Standard Bootstrap UCL	10.37	95% Bootstrap-t UCL	13.26
95% Hall's Bootstrap UCL	11.71	95% Percentile Bootstrap UCL	10.6
95% BCA Bootstrap UCL	11.08		
90% Chebyshev(Mean, Sd) UCL	13.21	95% Chebyshev(Mean, Sd) UCL	15.87
97.5% Chebyshev(Mean, Sd) UCL	19.55	99% Chebyshev(Mean, Sd) UCL	26.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.63	Mean	16.33
Maximum	34.2	Median	11.6
SD	11.13	Std. Error of Mean	3.712
Coefficient of Variation	0.682	Skewness	0.7
Mean of logged Data	2.56	SD of logged Data	0.755

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.23	95% Adjusted-CLT UCL (Chen-1995)	23.36
		95% Modified-t UCL (Johnson-1978)	23.37

Nonparametric Distribution Free UCLs

95% CLT UCL	22.43	95% Jackknife UCL	23.23
95% Standard Bootstrap UCL	22.03	95% Bootstrap-t UCL	25.21
95% Hall's Bootstrap UCL	24.94	95% Percentile Bootstrap UCL	22.5
95% BCA Bootstrap UCL	23.31		
90% Chebyshev(Mean, Sd) UCL	27.46	95% Chebyshev(Mean, Sd) UCL	32.51
97.5% Chebyshev(Mean, Sd) UCL	39.51	99% Chebyshev(Mean, Sd) UCL	53.26

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.22	Mean	3.902
Maximum	5.89	Median	3.32
SD	1.056	Std. Error of Mean	0.352
Coefficient of Variation	0.271	Skewness	1.538
Mean of logged Data	1.334	SD of logged Data	0.239

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.556	95% Adjusted-CLT UCL (Chen-1995)	4.673
		95% Modified-t UCL (Johnson-1978)	4.586

Nonparametric Distribution Free UCLs

95% CLT UCL	4.481	95% Jackknife UCL	4.556
95% Standard Bootstrap UCL	4.435	95% Bootstrap-t UCL	6.773
95% Hall's Bootstrap UCL	8.322	95% Percentile Bootstrap UCL	4.448
95% BCA Bootstrap UCL	4.661		
90% Chebyshev(Mean, Sd) UCL	4.958	95% Chebyshev(Mean, Sd) UCL	5.436
97.5% Chebyshev(Mean, Sd) UCL	6.1	99% Chebyshev(Mean, Sd) UCL	7.404

Suggested UCL to Use

95% Student's-t UCL	4.556	or 95% Modified-t UCL	4.586

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.27	Mean	21.97
Maximum	45.6	Median	19.5
SD	15.25	Std. Error of Mean	5.084
Coefficient of Variation	0.694	Skewness	0.718
Mean of logged Data	2.841	SD of logged Data	0.793

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.42	95% Adjusted-CLT UCL (Chen-1995)	31.63
		95% Modified-t UCL (Johnson-1978)	31.63

Nonparametric Distribution Free UCLs

95% CLT UCL	30.33	95% Jackknife UCL	31.42
95% Standard Bootstrap UCL	29.83	95% Bootstrap-t UCL	33.7
95% Hall's Bootstrap UCL	35.76	95% Percentile Bootstrap UCL	29.72
95% BCA Bootstrap UCL	31.01		
90% Chebyshev(Mean, Sd) UCL	37.22	95% Chebyshev(Mean, Sd) UCL	44.13
97.5% Chebyshev(Mean, Sd) UCL	53.72	99% Chebyshev(Mean, Sd) UCL	72.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.285	Mean	1.307
Maximum	1.33	Median	1.31
SD	0.0186	Std. Error of Mean	0.00619
Coefficient of Variation	0.0142	Skewness	0.0385
Mean of logged Data	0.268	SD of logged Data	0.0142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.319	95% Adjusted-CLT UCL (Chen-1995)	1.317
		95% Modified-t UCL (Johnson-1978)	1.319

Nonparametric Distribution Free UCLs

95% CLT UCL	1.317	95% Jackknife UCL	1.319
95% Standard Bootstrap UCL	1.317	95% Bootstrap-t UCL	1.319
95% Hall's Bootstrap UCL	1.315	95% Percentile Bootstrap UCL	1.317
95% BCA Bootstrap UCL	1.317		
90% Chebyshev(Mean, Sd) UCL	1.326	95% Chebyshev(Mean, Sd) UCL	1.334
97.5% Chebyshev(Mean, Sd) UCL	1.346	99% Chebyshev(Mean, Sd) UCL	1.369

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	2.93	Mean	13.71
Maximum	28.1	Median	9.24
SD	9.386	Std. Error of Mean	3.129
Coefficient of Variation	0.685	Skewness	0.66
Mean of logged Data	2.381	SD of logged Data	0.765

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.53	95% Adjusted-CLT UCL (Chen-1995)	19.59
		95% Modified-t UCL (Johnson-1978)	19.64

Nonparametric Distribution Free UCLs

95% CLT UCL	18.86	95% Jackknife UCL	19.53
95% Standard Bootstrap UCL	18.62	95% Bootstrap-t UCL	21.5
95% Hall's Bootstrap UCL	20.05	95% Percentile Bootstrap UCL	18.78
95% BCA Bootstrap UCL	19.01		
90% Chebyshev(Mean, Sd) UCL	23.1	95% Chebyshev(Mean, Sd) UCL	27.35
97.5% Chebyshev(Mean, Sd) UCL	33.25	99% Chebyshev(Mean, Sd) UCL	44.84

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1	Mean	2.204
Maximum	6.57	Median	1.73
SD	1.686	Std. Error of Mean	0.562
Coefficient of Variation	0.765	Skewness	2.681
Mean of logged Data	0.632	SD of logged Data	0.532

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.249	95% Adjusted-CLT UCL (Chen-1995)	3.665
		95% Modified-t UCL (Johnson-1978)	3.333

Nonparametric Distribution Free UCLs

95% CLT UCL	3.129	95% Jackknife UCL	3.249
95% Standard Bootstrap UCL	3.042	95% Bootstrap-t UCL	6.242

95% Hall's Bootstrap UCL	8.071	95% Percentile Bootstrap UCL	3.289
95% BCA Bootstrap UCL	3.641		
90% Chebyshev(Mean, Sd) UCL	3.89	95% Chebyshev(Mean, Sd) UCL	4.654
97.5% Chebyshev(Mean, Sd) UCL	5.714	99% Chebyshev(Mean, Sd) UCL	7.796

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.654

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	8.714
Maximum	18.5	Median	8.49
SD	5.967	Std. Error of Mean	1.989
Coefficient of Variation	0.685	Skewness	0.859
Mean of logged Data	1.949	SD of logged Data	0.705

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.41	95% Adjusted-CLT UCL (Chen-1995)	12.59
		95% Modified-t UCL (Johnson-1978)	12.51

Nonparametric Distribution Free UCLs

95% CLT UCL	11.99	95% Jackknife UCL	12.41
95% Standard Bootstrap UCL	11.84	95% Bootstrap-t UCL	14.13
95% Hall's Bootstrap UCL	15.07	95% Percentile Bootstrap UCL	11.93
95% BCA Bootstrap UCL	12.37		
90% Chebyshev(Mean, Sd) UCL	14.68	95% Chebyshev(Mean, Sd) UCL	17.38
97.5% Chebyshev(Mean, Sd) UCL	21.14	99% Chebyshev(Mean, Sd) UCL	28.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.56	Mean	21.84
Maximum	44.8	Median	17.6
SD	14.79	Std. Error of Mean	4.931

Coefficient of Variation	0.677	Skewness	0.706
Mean of logged Data	2.851	SD of logged Data	0.762

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.01	95% Adjusted-CLT UCL (Chen-1995)	31.19
		95% Modified-t UCL (Johnson-1978)	31.2

Nonparametric Distribution Free UCLs

95% CLT UCL	29.95	95% Jackknife UCL	31.01
95% Standard Bootstrap UCL	29.51	95% Bootstrap-t UCL	34.45
95% Hall's Bootstrap UCL	34.1	95% Percentile Bootstrap UCL	29.91
95% BCA Bootstrap UCL	30.71		
90% Chebyshev(Mean, Sd) UCL	36.63	95% Chebyshev(Mean, Sd) UCL	43.33
97.5% Chebyshev(Mean, Sd) UCL	52.63	99% Chebyshev(Mean, Sd) UCL	70.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:33:21 PM
From File	37017_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	14.6	Mean	16.23
Maximum	17.3	Median	16.5
SD	0.819	Std. Error of Mean	0.273
Coefficient of Variation	0.0504	Skewness	-0.999
Mean of logged Data	2.786	SD of logged Data	0.0515

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.74	95% Adjusted-CLT UCL (Chen-1995)	16.59
		95% Modified-t UCL (Johnson-1978)	16.73

Nonparametric Distribution Free UCLs

95% CLT UCL	16.68	95% Jackknife UCL	16.74
95% Standard Bootstrap UCL	16.66	95% Bootstrap-t UCL	16.65
95% Hall's Bootstrap UCL	16.61	95% Percentile Bootstrap UCL	16.63
95% BCA Bootstrap UCL	16.59		
90% Chebyshev(Mean, Sd) UCL	17.05	95% Chebyshev(Mean, Sd) UCL	17.42
97.5% Chebyshev(Mean, Sd) UCL	17.94	99% Chebyshev(Mean, Sd) UCL	18.95

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	11.1	Mean	12.43
Maximum	13	Median	12.5
SD	0.581	Std. Error of Mean	0.194
Coefficient of Variation	0.0467	Skewness	-1.626

Mean of logged Data	2.519	SD of logged Data	0.0483

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.79	95% Adjusted-CLT UCL (Chen-1995)	12.64
		95% Modified-t UCL (Johnson-1978)	12.78

Nonparametric Distribution Free UCLs

95% CLT UCL	12.75	95% Jackknife UCL	12.79
95% Standard Bootstrap UCL	12.74	95% Bootstrap-t UCL	12.7
95% Hall's Bootstrap UCL	12.67	95% Percentile Bootstrap UCL	12.7
95% BCA Bootstrap UCL	12.64		
90% Chebyshev(Mean, Sd) UCL	13.01	95% Chebyshev(Mean, Sd) UCL	13.28
97.5% Chebyshev(Mean, Sd) UCL	13.64	99% Chebyshev(Mean, Sd) UCL	14.36

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	51.3	Mean	55.07
Maximum	59	Median	54.9
SD	2.497	Std. Error of Mean	0.832
Coefficient of Variation	0.0454	Skewness	0.156
Mean of logged Data	4.008	SD of logged Data	0.0453

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.61	95% Adjusted-CLT UCL (Chen-1995)	56.48
		95% Modified-t UCL (Johnson-1978)	56.62

Nonparametric Distribution Free UCLs

95% CLT UCL	56.44	95% Jackknife UCL	56.61
95% Standard Bootstrap UCL	56.36	95% Bootstrap-t UCL	56.68
95% Hall's Bootstrap UCL	56.39	95% Percentile Bootstrap UCL	56.37
95% BCA Bootstrap UCL	56.31		

90% Chebyshev(Mean, Sd) UCL	57.56	95% Chebyshev(Mean, Sd) UCL	58.7
97.5% Chebyshev(Mean, Sd) UCL	60.27	99% Chebyshev(Mean, Sd) UCL	63.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.94	Mean	2.927
Maximum	4.5	Median	2.6
SD	0.847	Std. Error of Mean	0.282
Coefficient of Variation	0.289	Skewness	0.826
Mean of logged Data	1.039	SD of logged Data	0.278

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.452	95% Adjusted-CLT UCL (Chen-1995)	3.474
		95% Modified-t UCL (Johnson-1978)	3.465

Nonparametric Distribution Free UCLs

95% CLT UCL	3.391	95% Jackknife UCL	3.452
95% Standard Bootstrap UCL	3.366	95% Bootstrap-t UCL	3.604
95% Hall's Bootstrap UCL	3.523	95% Percentile Bootstrap UCL	3.356
95% BCA Bootstrap UCL	3.427		
90% Chebyshev(Mean, Sd) UCL	3.774	95% Chebyshev(Mean, Sd) UCL	4.157
97.5% Chebyshev(Mean, Sd) UCL	4.69	99% Chebyshev(Mean, Sd) UCL	5.736

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.396	Mean	0.49
Maximum	0.53	Median	0.515
SD	0.0467	Std. Error of Mean	0.0156
Coefficient of Variation	0.0953	Skewness	-1.323
Mean of logged Data	-0.717	SD of logged Data	0.101

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.519	95% Adjusted-CLT UCL (Chen-1995)	0.508
		95% Modified-t UCL (Johnson-1978)	0.518

Nonparametric Distribution Free UCLs

95% CLT UCL	0.516	95% Jackknife UCL	0.519
95% Standard Bootstrap UCL	0.514	95% Bootstrap-t UCL	0.513
95% Hall's Bootstrap UCL	0.51	95% Percentile Bootstrap UCL	0.513
95% BCA Bootstrap UCL	0.509		
90% Chebyshev(Mean, Sd) UCL	0.537	95% Chebyshev(Mean, Sd) UCL	0.558
97.5% Chebyshev(Mean, Sd) UCL	0.587	99% Chebyshev(Mean, Sd) UCL	0.645

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.935	Mean	2.091
Maximum	2.145	Median	2.12
SD	0.0718	Std. Error of Mean	0.0239
Coefficient of Variation	0.0343	Skewness	-1.645
Mean of logged Data	0.737	SD of logged Data	0.0351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.135	95% Adjusted-CLT UCL (Chen-1995)	2.116
		95% Modified-t UCL (Johnson-1978)	2.133

Nonparametric Distribution Free UCLs

95% CLT UCL	2.13	95% Jackknife UCL	2.135
95% Standard Bootstrap UCL	2.127	95% Bootstrap-t UCL	2.124
95% Hall's Bootstrap UCL	2.119	95% Percentile Bootstrap UCL	2.126
95% BCA Bootstrap UCL	2.119		
90% Chebyshev(Mean, Sd) UCL	2.162	95% Chebyshev(Mean, Sd) UCL	2.195

97.5% Chebyshev(Mean, Sd) UCL	2.24	99% Chebyshev(Mean, Sd) UCL	2.329

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.01	Mean	4.473
Maximum	8.03	Median	2.99
SD	2.493	Std. Error of Mean	0.831
Coefficient of Variation	0.557	Skewness	0.561
Mean of logged Data	1.357	SD of logged Data	0.564

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.019	95% Adjusted-CLT UCL (Chen-1995)	6.006
		95% Modified-t UCL (Johnson-1978)	6.045

Nonparametric Distribution Free UCLs

95% CLT UCL	5.84	95% Jackknife UCL	6.019
95% Standard Bootstrap UCL	5.745	95% Bootstrap-t UCL	6.317
95% Hall's Bootstrap UCL	5.613	95% Percentile Bootstrap UCL	5.793
95% BCA Bootstrap UCL	5.876		
90% Chebyshev(Mean, Sd) UCL	6.966	95% Chebyshev(Mean, Sd) UCL	8.096
97.5% Chebyshev(Mean, Sd) UCL	9.663	99% Chebyshev(Mean, Sd) UCL	12.74

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.9	Mean	5.908
Maximum	11.2	Median	4.15
SD	3.702	Std. Error of Mean	1.234

Coefficient of Variation	0.627	Skewness	0.406
Mean of logged Data	1.577	SD of logged Data	0.693

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.203	95% Adjusted-CLT UCL (Chen-1995)	8.116
		95% Modified-t UCL (Johnson-1978)	8.23

Nonparametric Distribution Free UCLs

95% CLT UCL	7.938	95% Jackknife UCL	8.203
95% Standard Bootstrap UCL	7.826	95% Bootstrap-t UCL	8.651
95% Hall's Bootstrap UCL	7.556	95% Percentile Bootstrap UCL	7.85
95% BCA Bootstrap UCL	7.957		
90% Chebyshev(Mean, Sd) UCL	9.61	95% Chebyshev(Mean, Sd) UCL	11.29
97.5% Chebyshev(Mean, Sd) UCL	13.61	99% Chebyshev(Mean, Sd) UCL	18.19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.66	Mean	8.358
Maximum	15.2	Median	5.84
SD	5.022	Std. Error of Mean	1.674
Coefficient of Variation	0.601	Skewness	0.375
Mean of logged Data	1.94	SD of logged Data	0.665

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.47	95% Adjusted-CLT UCL (Chen-1995)	11.34
		95% Modified-t UCL (Johnson-1978)	11.51

Nonparametric Distribution Free UCLs

95% CLT UCL	11.11	95% Jackknife UCL	11.47
95% Standard Bootstrap UCL	10.95	95% Bootstrap-t UCL	11.95
95% Hall's Bootstrap UCL	10.7	95% Percentile Bootstrap UCL	11.09
95% BCA Bootstrap UCL	11.06		
90% Chebyshev(Mean, Sd) UCL	13.38	95% Chebyshev(Mean, Sd) UCL	15.65
97.5% Chebyshev(Mean, Sd) UCL	18.81	99% Chebyshev(Mean, Sd) UCL	25.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.85	Mean	6.554
Maximum	11.5	Median	4.81
SD	3.548	Std. Error of Mean	1.183
Coefficient of Variation	0.541	Skewness	0.387
Mean of logged Data	1.741	SD of logged Data	0.566

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.753	95% Adjusted-CLT UCL (Chen-1995)	8.662
		95% Modified-t UCL (Johnson-1978)	8.778

Nonparametric Distribution Free UCLs

95% CLT UCL	8.499	95% Jackknife UCL	8.753
95% Standard Bootstrap UCL	8.387	95% Bootstrap-t UCL	8.995
95% Hall's Bootstrap UCL	8.064	95% Percentile Bootstrap UCL	8.483
95% BCA Bootstrap UCL	8.456		
90% Chebyshev(Mean, Sd) UCL	10.1	95% Chebyshev(Mean, Sd) UCL	11.71
97.5% Chebyshev(Mean, Sd) UCL	13.94	99% Chebyshev(Mean, Sd) UCL	18.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	3.582
Maximum	7.05	Median	2.32
SD	1.879	Std. Error of Mean	0.626
Coefficient of Variation	0.525	Skewness	0.878
Mean of logged Data	1.161	SD of logged Data	0.498

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.747	95% Adjusted-CLT UCL (Chen-1995)	4.808
		95% Modified-t UCL (Johnson-1978)	4.778

Nonparametric Distribution Free UCLs

95% CLT UCL	4.613	95% Jackknife UCL	4.747
95% Standard Bootstrap UCL	4.558	95% Bootstrap-t UCL	5.173
95% Hall's Bootstrap UCL	4.495	95% Percentile Bootstrap UCL	4.643
95% BCA Bootstrap UCL	4.709		
90% Chebyshev(Mean, Sd) UCL	5.461	95% Chebyshev(Mean, Sd) UCL	6.313
97.5% Chebyshev(Mean, Sd) UCL	7.494	99% Chebyshev(Mean, Sd) UCL	9.815

Suggested UCL to Use

95% Student's-t UCL	4.747	or 95% Modified-t UCL	4.778

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	6.784
Maximum	12.6	Median	4.71
SD	4.125	Std. Error of Mean	1.375
Coefficient of Variation	0.608	Skewness	0.428
Mean of logged Data	1.728	SD of logged Data	0.672

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.341	95% Adjusted-CLT UCL (Chen-1995)	9.256
		95% Modified-t UCL (Johnson-1978)	9.374

Nonparametric Distribution Free UCLs

95% CLT UCL	9.046	95% Jackknife UCL	9.341
95% Standard Bootstrap UCL	8.942	95% Bootstrap-t UCL	9.666
95% Hall's Bootstrap UCL	8.698	95% Percentile Bootstrap UCL	8.927
95% BCA Bootstrap UCL	9.032		
90% Chebyshev(Mean, Sd) UCL	10.91	95% Chebyshev(Mean, Sd) UCL	12.78
97.5% Chebyshev(Mean, Sd) UCL	15.37	99% Chebyshev(Mean, Sd) UCL	20.47

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.73	Mean	3.153
Maximum	3.3	Median	3.24
SD	0.191	Std. Error of Mean	0.0635
Coefficient of Variation	0.0605	Skewness	-1.668
Mean of logged Data	1.147	SD of logged Data	0.0631

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.271	95% Adjusted-CLT UCL (Chen-1995)	3.22
		95% Modified-t UCL (Johnson-1978)	3.265

Nonparametric Distribution Free UCLs

95% CLT UCL	3.257	95% Jackknife UCL	3.271
95% Standard Bootstrap UCL	3.251	95% Bootstrap-t UCL	3.241
95% Hall's Bootstrap UCL	3.227	95% Percentile Bootstrap UCL	3.241
95% BCA Bootstrap UCL	3.227		
90% Chebyshev(Mean, Sd) UCL	3.343	95% Chebyshev(Mean, Sd) UCL	3.43
97.5% Chebyshev(Mean, Sd) UCL	3.55	99% Chebyshev(Mean, Sd) UCL	3.785

Suggested UCL to Use

95% Student's-t UCL	3.271	or 95% Modified-t UCL	3.265

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	5.832
Maximum	12.3	Median	3.08
SD	4.334	Std. Error of Mean	1.445
Coefficient of Variation	0.743	Skewness	0.558
Mean of logged Data	1.493	SD of logged Data	0.788

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.518	95% Adjusted-CLT UCL (Chen-1995)	8.495
		95% Modified-t UCL (Johnson-1978)	8.563

Nonparametric Distribution Free UCLs

95% CLT UCL	8.208	95% Jackknife UCL	8.518
95% Standard Bootstrap UCL	8.031	95% Bootstrap-t UCL	9.112
95% Hall's Bootstrap UCL	7.715	95% Percentile Bootstrap UCL	8.033
95% BCA Bootstrap UCL	8.221		
90% Chebyshev(Mean, Sd) UCL	10.17	95% Chebyshev(Mean, Sd) UCL	12.13
97.5% Chebyshev(Mean, Sd) UCL	14.85	99% Chebyshev(Mean, Sd) UCL	20.21

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.934	Mean	1.211
Maximum	1.32	Median	1.285
SD	0.14	Std. Error of Mean	0.0468
Coefficient of Variation	0.116	Skewness	-1.402
Mean of logged Data	0.185	SD of logged Data	0.125

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.298	95% Adjusted-CLT UCL (Chen-1995)	1.265
		95% Modified-t UCL (Johnson-1978)	1.294

Nonparametric Distribution Free UCLs

95% CLT UCL	1.288	95% Jackknife UCL	1.298
95% Standard Bootstrap UCL	1.282	95% Bootstrap-t UCL	1.282
95% Hall's Bootstrap UCL	1.266	95% Percentile Bootstrap UCL	1.28
95% BCA Bootstrap UCL	1.269		
90% Chebyshev(Mean, Sd) UCL	1.351	95% Chebyshev(Mean, Sd) UCL	1.415
97.5% Chebyshev(Mean, Sd) UCL	1.503	99% Chebyshev(Mean, Sd) UCL	1.676

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.33	Mean	5.955
Maximum	10.7	Median	3.99
SD	3.397	Std. Error of Mean	1.132
Coefficient of Variation	0.57	Skewness	0.425
Mean of logged Data	1.63	SD of logged Data	0.596

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.06	95% Adjusted-CLT UCL (Chen-1995)	7.989
		95% Modified-t UCL (Johnson-1978)	8.087

Nonparametric Distribution Free UCLs

95% CLT UCL	7.817	95% Jackknife UCL	8.06
95% Standard Bootstrap UCL	7.677	95% Bootstrap-t UCL	8.318
95% Hall's Bootstrap UCL	7.345	95% Percentile Bootstrap UCL	7.688
95% BCA Bootstrap UCL	7.836		
90% Chebyshev(Mean, Sd) UCL	9.352	95% Chebyshev(Mean, Sd) UCL	10.89
97.5% Chebyshev(Mean, Sd) UCL	13.03	99% Chebyshev(Mean, Sd) UCL	17.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.63	Mean	5.308
Maximum	8.27	Median	5
SD	1.423	Std. Error of Mean	0.474
Coefficient of Variation	0.268	Skewness	0.974
Mean of logged Data	1.639	SD of logged Data	0.259

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.19	95% Adjusted-CLT UCL (Chen-1995)	6.253
		95% Modified-t UCL (Johnson-1978)	6.216

Nonparametric Distribution Free UCLs

95% CLT UCL	6.088	95% Jackknife UCL	6.19
95% Standard Bootstrap UCL	6.082	95% Bootstrap-t UCL	6.379
95% Hall's Bootstrap UCL	6.881	95% Percentile Bootstrap UCL	5.996
95% BCA Bootstrap UCL	6.206		
90% Chebyshev(Mean, Sd) UCL	6.731	95% Chebyshev(Mean, Sd) UCL	7.375
97.5% Chebyshev(Mean, Sd) UCL	8.27	99% Chebyshev(Mean, Sd) UCL	10.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.37	Mean	4.176
Maximum	6.43	Median	3.3
SD	1.585	Std. Error of Mean	0.528
Coefficient of Variation	0.38	Skewness	0.589
Mean of logged Data	1.367	SD of logged Data	0.372

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.158	95% Adjusted-CLT UCL (Chen-1995)	5.155
		95% Modified-t UCL (Johnson-1978)	5.175

Nonparametric Distribution Free UCLs

95% CLT UCL	5.044	95% Jackknife UCL	5.158
95% Standard Bootstrap UCL	5.009	95% Bootstrap-t UCL	5.37
95% Hall's Bootstrap UCL	4.85	95% Percentile Bootstrap UCL	5.054
95% BCA Bootstrap UCL	5.037		
90% Chebyshev(Mean, Sd) UCL	5.76	95% Chebyshev(Mean, Sd) UCL	6.478
97.5% Chebyshev(Mean, Sd) UCL	7.474	99% Chebyshev(Mean, Sd) UCL	9.431

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.67	Mean	6.256
Maximum	12.4	Median	3.3
SD	4.071	Std. Error of Mean	1.357
Coefficient of Variation	0.651	Skewness	0.616
Mean of logged Data	1.641	SD of logged Data	0.655

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.779	95% Adjusted-CLT UCL (Chen-1995)	8.785
		95% Modified-t UCL (Johnson-1978)	8.825

Nonparametric Distribution Free UCLs

95% CLT UCL	8.488	95% Jackknife UCL	8.779
95% Standard Bootstrap UCL	8.365	95% Bootstrap-t UCL	9.378
95% Hall's Bootstrap UCL	8.168	95% Percentile Bootstrap UCL	8.387
95% BCA Bootstrap UCL	8.632		
90% Chebyshev(Mean, Sd) UCL	10.33	95% Chebyshev(Mean, Sd) UCL	12.17
97.5% Chebyshev(Mean, Sd) UCL	14.73	99% Chebyshev(Mean, Sd) UCL	19.76

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.17

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:34:22 PM
From File	37019_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	14.1	Mean	15.86
Maximum	17.1	Median	15.7
SD	0.977	Std. Error of Mean	0.326
Coefficient of Variation	0.0616	Skewness	-0.438
Mean of logged Data	2.762	SD of logged Data	0.0625

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.46	95% Adjusted-CLT UCL (Chen-1995)	16.34
		95% Modified-t UCL (Johnson-1978)	16.45

Nonparametric Distribution Free UCLs

95% CLT UCL	16.39	95% Jackknife UCL	16.46
95% Standard Bootstrap UCL	16.36	95% Bootstrap-t UCL	16.42
95% Hall's Bootstrap UCL	16.35	95% Percentile Bootstrap UCL	16.34
95% BCA Bootstrap UCL	16.3		
90% Chebyshev(Mean, Sd) UCL	16.83	95% Chebyshev(Mean, Sd) UCL	17.28
97.5% Chebyshev(Mean, Sd) UCL	17.89	99% Chebyshev(Mean, Sd) UCL	19.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	11.7	Mean	12.71
Maximum	14.2	Median	12.8
SD	0.84	Std. Error of Mean	0.28
Coefficient of Variation	0.0661	Skewness	0.43

Mean of logged Data	2.541	SD of logged Data	0.0656

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.23	95% Adjusted-CLT UCL (Chen-1995)	13.21
		95% Modified-t UCL (Johnson-1978)	13.24

Nonparametric Distribution Free UCLs

95% CLT UCL	13.17	95% Jackknife UCL	13.23
95% Standard Bootstrap UCL	13.15	95% Bootstrap-t UCL	13.31
95% Hall's Bootstrap UCL	13.36	95% Percentile Bootstrap UCL	13.18
95% BCA Bootstrap UCL	13.19		
90% Chebyshev(Mean, Sd) UCL	13.55	95% Chebyshev(Mean, Sd) UCL	13.93
97.5% Chebyshev(Mean, Sd) UCL	14.46	99% Chebyshev(Mean, Sd) UCL	15.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	50.3	Mean	55.38
Maximum	75.5	Median	52.7
SD	7.751	Std. Error of Mean	2.584
Coefficient of Variation	0.14	Skewness	2.712
Mean of logged Data	4.007	SD of logged Data	0.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	60.18	95% Adjusted-CLT UCL (Chen-1995)	62.12
		95% Modified-t UCL (Johnson-1978)	60.57

Nonparametric Distribution Free UCLs

95% CLT UCL	59.63	95% Jackknife UCL	60.18
95% Standard Bootstrap UCL	59.4	95% Bootstrap-t UCL	73.25
95% Hall's Bootstrap UCL	75.36	95% Percentile Bootstrap UCL	60.02
95% BCA Bootstrap UCL	61.44		
90% Chebyshev(Mean, Sd) UCL	63.13	95% Chebyshev(Mean, Sd) UCL	66.64
97.5% Chebyshev(Mean, Sd) UCL	71.51	99% Chebyshev(Mean, Sd) UCL	81.08

Suggested UCL to Use

95% Student's-t UCL	60.18	or 95% Modified-t UCL	60.57

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.781	Mean	0.975
Maximum	1.17	Median	0.963
SD	0.128	Std. Error of Mean	0.0454
Coefficient of Variation	0.132	Skewness	0.301
Mean of logged Data	-0.0328	SD of logged Data	0.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.061	95% Adjusted-CLT UCL (Chen-1995)	1.055
		95% Modified-t UCL (Johnson-1978)	1.062

Nonparametric Distribution Free UCLs

95% CLT UCL	1.05	95% Jackknife UCL	1.061
95% Standard Bootstrap UCL	1.046	95% Bootstrap-t UCL	1.085
95% Hall's Bootstrap UCL	1.146	95% Percentile Bootstrap UCL	1.048
95% BCA Bootstrap UCL	1.049		
90% Chebyshev(Mean, Sd) UCL	1.111	95% Chebyshev(Mean, Sd) UCL	1.173
97.5% Chebyshev(Mean, Sd) UCL	1.259	99% Chebyshev(Mean, Sd) UCL	1.427

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.427	Mean	0.498
Maximum	0.52	Median	0.51
SD	0.0286	Std. Error of Mean	0.00955
Coefficient of Variation	0.0575	Skewness	-2.274
Mean of logged Data	-0.699	SD of logged Data	0.0608

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.516	95% Adjusted-CLT UCL (Chen-1995)	0.506
		95% Modified-t UCL (Johnson-1978)	0.515

Nonparametric Distribution Free UCLs

95% CLT UCL	0.514	95% Jackknife UCL	0.516
95% Standard Bootstrap UCL	0.513	95% Bootstrap-t UCL	0.511
95% Hall's Bootstrap UCL	0.508	95% Percentile Bootstrap UCL	0.511
95% BCA Bootstrap UCL	0.509		
90% Chebyshev(Mean, Sd) UCL	0.527	95% Chebyshev(Mean, Sd) UCL	0.54
97.5% Chebyshev(Mean, Sd) UCL	0.558	99% Chebyshev(Mean, Sd) UCL	0.593

Suggested UCL to Use

95% Student's-t UCL	0.516	or 95% Modified-t UCL	0.515

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.45	Mean	1.989
Maximum	2.115	Median	2.065
SD	0.207	Std. Error of Mean	0.0689
Coefficient of Variation	0.104	Skewness	-2.761
Mean of logged Data	0.682	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.118	95% Adjusted-CLT UCL (Chen-1995)	2.035
		95% Modified-t UCL (Johnson-1978)	2.107

Nonparametric Distribution Free UCLs

95% CLT UCL	2.103	95% Jackknife UCL	2.118
95% Standard Bootstrap UCL	2.094	95% Bootstrap-t UCL	2.076
95% Hall's Bootstrap UCL	2.058	95% Percentile Bootstrap UCL	2.071
95% BCA Bootstrap UCL	2.063		
90% Chebyshev(Mean, Sd) UCL	2.196	95% Chebyshev(Mean, Sd) UCL	2.29
97.5% Chebyshev(Mean, Sd) UCL	2.42	99% Chebyshev(Mean, Sd) UCL	2.675

Suggested UCL to Use

95% Student's-t UCL	2.118	or 95% Modified-t UCL	2.107

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	7.044
Maximum	13.9	Median	8.1
SD	4.4	Std. Error of Mean	1.467
Coefficient of Variation	0.625	Skewness	0.137
Mean of logged Data	1.727	SD of logged Data	0.76

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.772	95% Adjusted-CLT UCL (Chen-1995)	9.528
		95% Modified-t UCL (Johnson-1978)	9.783

Nonparametric Distribution Free UCLs

95% CLT UCL	9.457	95% Jackknife UCL	9.772
95% Standard Bootstrap UCL	9.259	95% Bootstrap-t UCL	9.848
95% Hall's Bootstrap UCL	9.256	95% Percentile Bootstrap UCL	9.342
95% BCA Bootstrap UCL	9.394		
90% Chebyshev(Mean, Sd) UCL	11.44	95% Chebyshev(Mean, Sd) UCL	13.44
97.5% Chebyshev(Mean, Sd) UCL	16.2	99% Chebyshev(Mean, Sd) UCL	21.64

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.02	Mean	7.471
Maximum	15.1	Median	6.74
SD	4.947	Std. Error of Mean	1.649
Coefficient of Variation	0.662	Skewness	0.293

Mean of logged Data	1.767	SD of logged Data	0.785

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.54	95% Adjusted-CLT UCL (Chen-1995)	10.36
		95% Modified-t UCL (Johnson-1978)	10.56

Nonparametric Distribution Free UCLs

95% CLT UCL	10.18	95% Jackknife UCL	10.54
95% Standard Bootstrap UCL	10.03	95% Bootstrap-t UCL	10.8
95% Hall's Bootstrap UCL	9.868	95% Percentile Bootstrap UCL	10.03
95% BCA Bootstrap UCL	10.22		
90% Chebyshev(Mean, Sd) UCL	12.42	95% Chebyshev(Mean, Sd) UCL	14.66
97.5% Chebyshev(Mean, Sd) UCL	17.77	99% Chebyshev(Mean, Sd) UCL	23.88

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	11.27
Maximum	21.7	Median	11.6
SD	7.204	Std. Error of Mean	2.401
Coefficient of Variation	0.639	Skewness	0.12
Mean of logged Data	2.185	SD of logged Data	0.779

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.74	95% Adjusted-CLT UCL (Chen-1995)	15.32
		95% Modified-t UCL (Johnson-1978)	15.75

Nonparametric Distribution Free UCLs

95% CLT UCL	15.22	95% Jackknife UCL	15.74
95% Standard Bootstrap UCL	14.99	95% Bootstrap-t UCL	15.95
95% Hall's Bootstrap UCL	14.53	95% Percentile Bootstrap UCL	15.16
95% BCA Bootstrap UCL	15.07		
90% Chebyshev(Mean, Sd) UCL	18.48	95% Chebyshev(Mean, Sd) UCL	21.74
97.5% Chebyshev(Mean, Sd) UCL	26.27	99% Chebyshev(Mean, Sd) UCL	35.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.48	Mean	6.507
Maximum	12.3	Median	7.01
SD	3.645	Std. Error of Mean	1.215
Coefficient of Variation	0.56	Skewness	0.266
Mean of logged Data	1.713	SD of logged Data	0.619

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.767	95% Adjusted-CLT UCL (Chen-1995)	8.621
		95% Modified-t UCL (Johnson-1978)	8.785

Nonparametric Distribution Free UCLs

95% CLT UCL	8.506	95% Jackknife UCL	8.767
95% Standard Bootstrap UCL	8.371	95% Bootstrap-t UCL	8.757
95% Hall's Bootstrap UCL	8.275	95% Percentile Bootstrap UCL	8.375
95% BCA Bootstrap UCL	8.373		
90% Chebyshev(Mean, Sd) UCL	10.15	95% Chebyshev(Mean, Sd) UCL	11.8
97.5% Chebyshev(Mean, Sd) UCL	14.1	99% Chebyshev(Mean, Sd) UCL	18.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	5.167
Maximum	9.49	Median	5.16
SD	2.944	Std. Error of Mean	0.981
Coefficient of Variation	0.57	Skewness	0.165
Mean of logged Data	1.472	SD of logged Data	0.643

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.992	95% Adjusted-CLT UCL (Chen-1995)	6.839
		95% Modified-t UCL (Johnson-1978)	7.001

Nonparametric Distribution Free UCLs

95% CLT UCL	6.781	95% Jackknife UCL	6.992
95% Standard Bootstrap UCL	6.697	95% Bootstrap-t UCL	7.04
95% Hall's Bootstrap UCL	6.571	95% Percentile Bootstrap UCL	6.674
95% BCA Bootstrap UCL	6.74		
90% Chebyshev(Mean, Sd) UCL	8.111	95% Chebyshev(Mean, Sd) UCL	9.445
97.5% Chebyshev(Mean, Sd) UCL	11.3	99% Chebyshev(Mean, Sd) UCL	14.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	9.909
Maximum	20.3	Median	12.3
SD	6.605	Std. Error of Mean	2.202
Coefficient of Variation	0.667	Skewness	0.0914
Mean of logged Data	2.006	SD of logged Data	0.888

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14	95% Adjusted-CLT UCL (Chen-1995)	13.6
		95% Modified-t UCL (Johnson-1978)	14.01

Nonparametric Distribution Free UCLs

95% CLT UCL	13.53	95% Jackknife UCL	14
95% Standard Bootstrap UCL	13.31	95% Bootstrap-t UCL	14
95% Hall's Bootstrap UCL	13.21	95% Percentile Bootstrap UCL	13.34
95% BCA Bootstrap UCL	13.34		
90% Chebyshev(Mean, Sd) UCL	16.51	95% Chebyshev(Mean, Sd) UCL	19.51
97.5% Chebyshev(Mean, Sd) UCL	23.66	99% Chebyshev(Mean, Sd) UCL	31.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.9	Mean	3.135
Maximum	3.25	Median	3.175
SD	0.109	Std. Error of Mean	0.0365
Coefficient of Variation	0.0349	Skewness	-1.333
Mean of logged Data	1.142	SD of logged Data	0.0356

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.203	95% Adjusted-CLT UCL (Chen-1995)	3.178
		95% Modified-t UCL (Johnson-1978)	3.2

Nonparametric Distribution Free UCLs

95% CLT UCL	3.195	95% Jackknife UCL	3.203
95% Standard Bootstrap UCL	3.191	95% Bootstrap-t UCL	3.188
95% Hall's Bootstrap UCL	3.18	95% Percentile Bootstrap UCL	3.186
95% BCA Bootstrap UCL	3.179		
90% Chebyshev(Mean, Sd) UCL	3.244	95% Chebyshev(Mean, Sd) UCL	3.294
97.5% Chebyshev(Mean, Sd) UCL	3.363	99% Chebyshev(Mean, Sd) UCL	3.498

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	12.67
Maximum	24.8	Median	14
SD	8.487	Std. Error of Mean	2.829
Coefficient of Variation	0.67	Skewness	-0.0269
Mean of logged Data	2.217	SD of logged Data	0.972

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.93	95% Adjusted-CLT UCL (Chen-1995)	17.3
		95% Modified-t UCL (Johnson-1978)	17.93

Nonparametric Distribution Free UCLs

95% CLT UCL	17.32	95% Jackknife UCL	17.93
95% Standard Bootstrap UCL	17	95% Bootstrap-t UCL	17.62
95% Hall's Bootstrap UCL	16.77	95% Percentile Bootstrap UCL	17.06
95% BCA Bootstrap UCL	17.29		
90% Chebyshev(Mean, Sd) UCL	21.16	95% Chebyshev(Mean, Sd) UCL	25
97.5% Chebyshev(Mean, Sd) UCL	30.34	99% Chebyshev(Mean, Sd) UCL	40.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	8	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.215	Mean	1.266
Maximum	1.3	Median	1.273
SD	0.0276	Std. Error of Mean	0.00976
Coefficient of Variation	0.0218	Skewness	-0.742
Mean of logged Data	0.236	SD of logged Data	0.0219

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.285	95% Adjusted-CLT UCL (Chen-1995)	1.28
		95% Modified-t UCL (Johnson-1978)	1.284

Nonparametric Distribution Free UCLs

95% CLT UCL	1.282	95% Jackknife UCL	1.285
95% Standard Bootstrap UCL	1.281	95% Bootstrap-t UCL	1.283
95% Hall's Bootstrap UCL	1.281	95% Percentile Bootstrap UCL	1.281
95% BCA Bootstrap UCL	1.278		
90% Chebyshev(Mean, Sd) UCL	1.296	95% Chebyshev(Mean, Sd) UCL	1.309
97.5% Chebyshev(Mean, Sd) UCL	1.327	99% Chebyshev(Mean, Sd) UCL	1.363

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.78	Mean	6.681
Maximum	12.3	Median	6.3
SD	3.714	Std. Error of Mean	1.238
Coefficient of Variation	0.556	Skewness	0.255
Mean of logged Data	1.744	SD of logged Data	0.606

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.983	95% Adjusted-CLT UCL (Chen-1995)	8.83
		95% Modified-t UCL (Johnson-1978)	9

Nonparametric Distribution Free UCLs

95% CLT UCL	8.717	95% Jackknife UCL	8.983
95% Standard Bootstrap UCL	8.601	95% Bootstrap-t UCL	9.05
95% Hall's Bootstrap UCL	8.342	95% Percentile Bootstrap UCL	8.651
95% BCA Bootstrap UCL	8.701		
90% Chebyshev(Mean, Sd) UCL	10.39	95% Chebyshev(Mean, Sd) UCL	12.08
97.5% Chebyshev(Mean, Sd) UCL	14.41	99% Chebyshev(Mean, Sd) UCL	19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.3	Mean	3.101
Maximum	4.63	Median	3.14
SD	0.732	Std. Error of Mean	0.259
Coefficient of Variation	0.236	Skewness	1.295
Mean of logged Data	1.11	SD of logged Data	0.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.591	95% Adjusted-CLT UCL (Chen-1995)	3.653
		95% Modified-t UCL (Johnson-1978)	3.611

Nonparametric Distribution Free UCLs

95% CLT UCL	3.527	95% Jackknife UCL	3.591
95% Standard Bootstrap UCL	3.504	95% Bootstrap-t UCL	3.759
95% Hall's Bootstrap UCL	4.573	95% Percentile Bootstrap UCL	3.498
95% BCA Bootstrap UCL	3.615		
90% Chebyshev(Mean, Sd) UCL	3.877	95% Chebyshev(Mean, Sd) UCL	4.229
97.5% Chebyshev(Mean, Sd) UCL	4.717	99% Chebyshev(Mean, Sd) UCL	5.676

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.18	Mean	5.393
Maximum	9.4	Median	3.75
SD	2.868	Std. Error of Mean	0.956
Coefficient of Variation	0.532	Skewness	0.38
Mean of logged Data	1.552	SD of logged Data	0.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.17	95% Adjusted-CLT UCL (Chen-1995)	7.094
		95% Modified-t UCL (Johnson-1978)	7.191

Nonparametric Distribution Free UCLs

95% CLT UCL	6.965	95% Jackknife UCL	7.17
95% Standard Bootstrap UCL	6.846	95% Bootstrap-t UCL	7.264
95% Hall's Bootstrap UCL	6.55	95% Percentile Bootstrap UCL	6.926
95% BCA Bootstrap UCL	6.898		
90% Chebyshev(Mean, Sd) UCL	8.261	95% Chebyshev(Mean, Sd) UCL	9.56
97.5% Chebyshev(Mean, Sd) UCL	11.36	99% Chebyshev(Mean, Sd) UCL	14.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.11	Mean	12.54
Maximum	24.8	Median	14
SD	7.993	Std. Error of Mean	2.664
Coefficient of Variation	0.637	Skewness	0.108
Mean of logged Data	2.283	SD of logged Data	0.805

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.5	95% Adjusted-CLT UCL (Chen-1995)	17.03
		95% Modified-t UCL (Johnson-1978)	17.51

Nonparametric Distribution Free UCLs

95% CLT UCL	16.93	95% Jackknife UCL	17.5
95% Standard Bootstrap UCL	16.54	95% Bootstrap-t UCL	17.64
95% Hall's Bootstrap UCL	16.43	95% Percentile Bootstrap UCL	16.43
95% BCA Bootstrap UCL	16.71		
90% Chebyshev(Mean, Sd) UCL	20.54	95% Chebyshev(Mean, Sd) UCL	24.16
97.5% Chebyshev(Mean, Sd) UCL	29.18	99% Chebyshev(Mean, Sd) UCL	39.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:35:45 PM
From File	39020_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.2	Mean	16.16
Maximum	19.9	Median	15.2
SD	2.968	Std. Error of Mean	0.989
Coefficient of Variation	0.184	Skewness	0.0529
Mean of logged Data	2.767	SD of logged Data	0.186

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18	95% Adjusted-CLT UCL (Chen-1995)	17.8
		95% Modified-t UCL (Johnson-1978)	18

Nonparametric Distribution Free UCLs

95% CLT UCL	17.78	95% Jackknife UCL	18
95% Standard Bootstrap UCL	17.71	95% Bootstrap-t UCL	18.09
95% Hall's Bootstrap UCL	17.43	95% Percentile Bootstrap UCL	17.7
95% BCA Bootstrap UCL	17.87		
90% Chebyshev(Mean, Sd) UCL	19.12	95% Chebyshev(Mean, Sd) UCL	20.47
97.5% Chebyshev(Mean, Sd) UCL	22.33	99% Chebyshev(Mean, Sd) UCL	26

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.66	Mean	13.63
Maximum	17.7	Median	13.5
SD	3.058	Std. Error of Mean	1.019
Coefficient of Variation	0.224	Skewness	-0.0289
Mean of logged Data	2.589	SD of logged Data	0.23

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.52	95% Adjusted-CLT UCL (Chen-1995)	15.3
		95% Modified-t UCL (Johnson-1978)	15.52

Nonparametric Distribution Free UCLs

95% CLT UCL	15.31	95% Jackknife UCL	15.52
95% Standard Bootstrap UCL	15.19	95% Bootstrap-t UCL	15.46
95% Hall's Bootstrap UCL	15.02	95% Percentile Bootstrap UCL	15.19
95% BCA Bootstrap UCL	15.24		
90% Chebyshev(Mean, Sd) UCL	16.69	95% Chebyshev(Mean, Sd) UCL	18.07
97.5% Chebyshev(Mean, Sd) UCL	19.99	99% Chebyshev(Mean, Sd) UCL	23.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	42.3	Mean	49.17
Maximum	59.8	Median	45.4
SD	7.65	Std. Error of Mean	2.55
Coefficient of Variation	0.156	Skewness	0.766
Mean of logged Data	3.885	SD of logged Data	0.15

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.91	95% Adjusted-CLT UCL (Chen-1995)	54.06
		95% Modified-t UCL (Johnson-1978)	54.02

Nonparametric Distribution Free UCLs

95% CLT UCL	53.36	95% Jackknife UCL	53.91
95% Standard Bootstrap UCL	53.15	95% Bootstrap-t UCL	54.6
95% Hall's Bootstrap UCL	52	95% Percentile Bootstrap UCL	52.9
95% BCA Bootstrap UCL	53.74		
90% Chebyshev(Mean, Sd) UCL	56.82	95% Chebyshev(Mean, Sd) UCL	60.28
97.5% Chebyshev(Mean, Sd) UCL	65.09	99% Chebyshev(Mean, Sd) UCL	74.54

Suggested UCL to Use

95% Student's-t UCL	53.91	or 95% Modified-t UCL	54.02

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.94	Mean	0.968
Maximum	0.99	Median	0.97
SD	0.0172	Std. Error of Mean	0.00572
Coefficient of Variation	0.0177	Skewness	-0.491
Mean of logged Data	-0.0329	SD of logged Data	0.0178

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.978	95% Adjusted-CLT UCL (Chen-1995)	0.976
		95% Modified-t UCL (Johnson-1978)	0.978

Nonparametric Distribution Free UCLs

95% CLT UCL	0.977	95% Jackknife UCL	0.978
95% Standard Bootstrap UCL	0.976	95% Bootstrap-t UCL	0.977
95% Hall's Bootstrap UCL	0.976	95% Percentile Bootstrap UCL	0.976
95% BCA Bootstrap UCL	0.976		
90% Chebyshev(Mean, Sd) UCL	0.985	95% Chebyshev(Mean, Sd) UCL	0.993
97.5% Chebyshev(Mean, Sd) UCL	1.003	99% Chebyshev(Mean, Sd) UCL	1.025

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.5	Mean	1.004
Maximum	4.91	Median	0.52
SD	1.465	Std. Error of Mean	0.488
Coefficient of Variation	1.459	Skewness	3
Mean of logged Data	-0.412	SD of logged Data	0.751

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.912	95% Adjusted-CLT UCL (Chen-1995)	2.329
		95% Modified-t UCL (Johnson-1978)	1.993

Nonparametric Distribution Free UCLs

95% CLT UCL	1.807	95% Jackknife UCL	1.912
95% Standard Bootstrap UCL	1.75	95% Bootstrap-t UCL	96.44
95% Hall's Bootstrap UCL	40.73	95% Percentile Bootstrap UCL	1.98
95% BCA Bootstrap UCL	2.468		
90% Chebyshev(Mean, Sd) UCL	2.469	95% Chebyshev(Mean, Sd) UCL	3.132
97.5% Chebyshev(Mean, Sd) UCL	4.053	99% Chebyshev(Mean, Sd) UCL	5.862

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.132

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	2.574
Maximum	4.03	Median	2.115
SD	0.74	Std. Error of Mean	0.247
Coefficient of Variation	0.288	Skewness	1.312
Mean of logged Data	0.913	SD of logged Data	0.26

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.033	95% Adjusted-CLT UCL (Chen-1995)	3.096
		95% Modified-t UCL (Johnson-1978)	3.051

Nonparametric Distribution Free UCLs

95% CLT UCL	2.98	95% Jackknife UCL	3.033
95% Standard Bootstrap UCL	2.96	95% Bootstrap-t UCL	3.51
95% Hall's Bootstrap UCL	3.196	95% Percentile Bootstrap UCL	2.986
95% BCA Bootstrap UCL	3.057		
90% Chebyshev(Mean, Sd) UCL	3.315	95% Chebyshev(Mean, Sd) UCL	3.65
97.5% Chebyshev(Mean, Sd) UCL	4.116	99% Chebyshev(Mean, Sd) UCL	5.03

Suggested UCL to Use

95% Student's-t UCL	3.033	or 95% Modified-t UCL	3.051

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.09	Mean	15.49
Maximum	33.4	Median	11.9
SD	10.87	Std. Error of Mean	3.624
Coefficient of Variation	0.702	Skewness	0.475
Mean of logged Data	2.425	SD of logged Data	0.955

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.23	95% Adjusted-CLT UCL (Chen-1995)	22.07
		95% Modified-t UCL (Johnson-1978)	22.33

Nonparametric Distribution Free UCLs

95% CLT UCL	21.45	95% Jackknife UCL	22.23
95% Standard Bootstrap UCL	21.17	95% Bootstrap-t UCL	23.36
95% Hall's Bootstrap UCL	21.91	95% Percentile Bootstrap UCL	21.27
95% BCA Bootstrap UCL	21.39		
90% Chebyshev(Mean, Sd) UCL	26.36	95% Chebyshev(Mean, Sd) UCL	31.29
97.5% Chebyshev(Mean, Sd) UCL	38.12	99% Chebyshev(Mean, Sd) UCL	51.55

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.76	Mean	22.75
Maximum	47.1	Median	20.6
SD	15.8	Std. Error of Mean	5.267
Coefficient of Variation	0.695	Skewness	0.273
Mean of logged Data	2.762	SD of logged Data	1.078

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.55	95% Adjusted-CLT UCL (Chen-1995)	31.93
		95% Modified-t UCL (Johnson-1978)	32.63

Nonparametric Distribution Free UCLs

95% CLT UCL	31.41	95% Jackknife UCL	32.55
95% Standard Bootstrap UCL	30.88	95% Bootstrap-t UCL	32.79
95% Hall's Bootstrap UCL	31.31	95% Percentile Bootstrap UCL	30.89
95% BCA Bootstrap UCL	31.11		
90% Chebyshev(Mean, Sd) UCL	38.55	95% Chebyshev(Mean, Sd) UCL	45.71
97.5% Chebyshev(Mean, Sd) UCL	55.64	99% Chebyshev(Mean, Sd) UCL	75.16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.215	Mean	30.35
Maximum	67.1	Median	25.9
SD	22.3	Std. Error of Mean	7.434
Coefficient of Variation	0.735	Skewness	0.407
Mean of logged Data	3.013	SD of logged Data	1.121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.17	95% Adjusted-CLT UCL (Chen-1995)	43.66
		95% Modified-t UCL (Johnson-1978)	44.34

Nonparametric Distribution Free UCLs

95% CLT UCL	42.58	95% Jackknife UCL	44.17
95% Standard Bootstrap UCL	41.56	95% Bootstrap-t UCL	45.87
95% Hall's Bootstrap UCL	43.24	95% Percentile Bootstrap UCL	42.26
95% BCA Bootstrap UCL	42.97		
90% Chebyshev(Mean, Sd) UCL	52.65	95% Chebyshev(Mean, Sd) UCL	62.75
97.5% Chebyshev(Mean, Sd) UCL	76.77	99% Chebyshev(Mean, Sd) UCL	104.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.215	Mean	19.81
Maximum	41.5	Median	17.2
SD	13.53	Std. Error of Mean	4.511
Coefficient of Variation	0.683	Skewness	0.418
Mean of logged Data	2.695	SD of logged Data	0.902

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.2	95% Adjusted-CLT UCL (Chen-1995)	27.9
		95% Modified-t UCL (Johnson-1978)	28.3

Nonparametric Distribution Free UCLs

95% CLT UCL	27.23	95% Jackknife UCL	28.2
95% Standard Bootstrap UCL	26.87	95% Bootstrap-t UCL	29.84
95% Hall's Bootstrap UCL	27.95	95% Percentile Bootstrap UCL	27.06
95% BCA Bootstrap UCL	27.51		
90% Chebyshev(Mean, Sd) UCL	33.34	95% Chebyshev(Mean, Sd) UCL	39.47
97.5% Chebyshev(Mean, Sd) UCL	47.98	99% Chebyshev(Mean, Sd) UCL	64.69

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.09	Mean	11.33
Maximum	24	Median	9.42
SD	7.82	Std. Error of Mean	2.607
Coefficient of Variation	0.69	Skewness	0.482
Mean of logged Data	2.144	SD of logged Data	0.88

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.18	95% Adjusted-CLT UCL (Chen-1995)	16.06
		95% Modified-t UCL (Johnson-1978)	16.25

Nonparametric Distribution Free UCLs

95% CLT UCL	15.62	95% Jackknife UCL	16.18
95% Standard Bootstrap UCL	15.27	95% Bootstrap-t UCL	16.43
95% Hall's Bootstrap UCL	15.33	95% Percentile Bootstrap UCL	15.38
95% BCA Bootstrap UCL	15.7		
90% Chebyshev(Mean, Sd) UCL	19.15	95% Chebyshev(Mean, Sd) UCL	22.69
97.5% Chebyshev(Mean, Sd) UCL	27.61	99% Chebyshev(Mean, Sd) UCL	37.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.09	Mean	19.63
Maximum	43	Median	16.7
SD	13.97	Std. Error of Mean	4.657
Coefficient of Variation	0.712	Skewness	0.451
Mean of logged Data	2.631	SD of logged Data	1.023

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.29	95% Adjusted-CLT UCL (Chen-1995)	28.04
		95% Modified-t UCL (Johnson-1978)	28.41

Nonparametric Distribution Free UCLs

95% CLT UCL	27.29	95% Jackknife UCL	28.29
95% Standard Bootstrap UCL	26.83	95% Bootstrap-t UCL	29.71
95% Hall's Bootstrap UCL	27.79	95% Percentile Bootstrap UCL	27.04
95% BCA Bootstrap UCL	27.06		
90% Chebyshev(Mean, Sd) UCL	33.6	95% Chebyshev(Mean, Sd) UCL	39.93
97.5% Chebyshev(Mean, Sd) UCL	48.72	99% Chebyshev(Mean, Sd) UCL	65.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.65	Mean	5.076
Maximum	10.1	Median	3.38
SD	2.722	Std. Error of Mean	0.907
Coefficient of Variation	0.536	Skewness	1.042
Mean of logged Data	1.51	SD of logged Data	0.492

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.763	95% Adjusted-CLT UCL (Chen-1995)	6.905
		95% Modified-t UCL (Johnson-1978)	6.816

Nonparametric Distribution Free UCLs

95% CLT UCL	6.569	95% Jackknife UCL	6.763
95% Standard Bootstrap UCL	6.494	95% Bootstrap-t UCL	7.666
95% Hall's Bootstrap UCL	6.422	95% Percentile Bootstrap UCL	6.571
95% BCA Bootstrap UCL	6.748		
90% Chebyshev(Mean, Sd) UCL	7.798	95% Chebyshev(Mean, Sd) UCL	9.031
97.5% Chebyshev(Mean, Sd) UCL	10.74	99% Chebyshev(Mean, Sd) UCL	14.1

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.09	Mean	27.2
Maximum	59	Median	21.8
SD	19.17	Std. Error of Mean	6.391
Coefficient of Variation	0.705	Skewness	0.369
Mean of logged Data	2.918	SD of logged Data	1.122

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.08	95% Adjusted-CLT UCL (Chen-1995)	38.55
		95% Modified-t UCL (Johnson-1978)	39.21

Nonparametric Distribution Free UCLs

95% CLT UCL	37.71	95% Jackknife UCL	39.08
95% Standard Bootstrap UCL	37.18	95% Bootstrap-t UCL	40.28
95% Hall's Bootstrap UCL	39.26	95% Percentile Bootstrap UCL	37.24
95% BCA Bootstrap UCL	37.34		
90% Chebyshev(Mean, Sd) UCL	46.37	95% Chebyshev(Mean, Sd) UCL	55.05
97.5% Chebyshev(Mean, Sd) UCL	67.11	99% Chebyshev(Mean, Sd) UCL	90.79

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.255	Mean	1.292
Maximum	1.325	Median	1.295
SD	0.0243	Std. Error of Mean	0.00808
Coefficient of Variation	0.0188	Skewness	-0.366
Mean of logged Data	0.256	SD of logged Data	0.0188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.307	95% Adjusted-CLT UCL (Chen-1995)	1.304
		95% Modified-t UCL (Johnson-1978)	1.307

Nonparametric Distribution Free UCLs

95% CLT UCL	1.306	95% Jackknife UCL	1.307
95% Standard Bootstrap UCL	1.305	95% Bootstrap-t UCL	1.306
95% Hall's Bootstrap UCL	1.303	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.303		
90% Chebyshev(Mean, Sd) UCL	1.316	95% Chebyshev(Mean, Sd) UCL	1.327
97.5% Chebyshev(Mean, Sd) UCL	1.343	99% Chebyshev(Mean, Sd) UCL	1.373

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.215	Mean	19.85
Maximum	41.9	Median	16.8
SD	14.01	Std. Error of Mean	4.67
Coefficient of Variation	0.706	Skewness	0.422
Mean of logged Data	2.68	SD of logged Data	0.924

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.53	95% Adjusted-CLT UCL (Chen-1995)	28.23
		95% Modified-t UCL (Johnson-1978)	28.64

Nonparametric Distribution Free UCLs

95% CLT UCL	27.53	95% Jackknife UCL	28.53
95% Standard Bootstrap UCL	27.08	95% Bootstrap-t UCL	29.62
95% Hall's Bootstrap UCL	27.25	95% Percentile Bootstrap UCL	27.32
95% BCA Bootstrap UCL	27.9		
90% Chebyshev(Mean, Sd) UCL	33.86	95% Chebyshev(Mean, Sd) UCL	40.2
97.5% Chebyshev(Mean, Sd) UCL	49.01	99% Chebyshev(Mean, Sd) UCL	66.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.94	Mean	2.719
Maximum	4.96	Median	0.97
SD	2.091	Std. Error of Mean	0.697
Coefficient of Variation	0.769	Skewness	0.271
Mean of logged Data	0.683	SD of logged Data	0.864

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.015	95% Adjusted-CLT UCL (Chen-1995)	3.932
		95% Modified-t UCL (Johnson-1978)	4.025

Nonparametric Distribution Free UCLs

95% CLT UCL	3.865	95% Jackknife UCL	4.015
95% Standard Bootstrap UCL	3.775	95% Bootstrap-t UCL	3.788
95% Hall's Bootstrap UCL	3.487	95% Percentile Bootstrap UCL	3.612
95% BCA Bootstrap UCL	3.609		
90% Chebyshev(Mean, Sd) UCL	4.81	95% Chebyshev(Mean, Sd) UCL	5.757
97.5% Chebyshev(Mean, Sd) UCL	7.071	99% Chebyshev(Mean, Sd) UCL	9.653

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 5.757

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	10.49
Maximum	21.4	Median	6.9
SD	6.651	Std. Error of Mean	2.217
Coefficient of Variation	0.634	Skewness	0.513
Mean of logged Data	2.145	SD of logged Data	0.709

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.61	95% Adjusted-CLT UCL (Chen-1995)	14.54
		95% Modified-t UCL (Johnson-1978)	14.67

Nonparametric Distribution Free UCLs

95% CLT UCL	14.13	95% Jackknife UCL	14.61
95% Standard Bootstrap UCL	13.93	95% Bootstrap-t UCL	15.35
95% Hall's Bootstrap UCL	14.29	95% Percentile Bootstrap UCL	14.13
95% BCA Bootstrap UCL	14.25		
90% Chebyshev(Mean, Sd) UCL	17.14	95% Chebyshev(Mean, Sd) UCL	20.15
97.5% Chebyshev(Mean, Sd) UCL	24.33	99% Chebyshev(Mean, Sd) UCL	32.55

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.215	Mean	27.38
Maximum	58.9	Median	22.6
SD	18.99	Std. Error of Mean	6.33
Coefficient of Variation	0.693	Skewness	0.415
Mean of logged Data	2.976	SD of logged Data	1.006

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.15	95% Adjusted-CLT UCL (Chen-1995)	38.73
		95% Modified-t UCL (Johnson-1978)	39.3

Nonparametric Distribution Free UCLs

95% CLT UCL	37.8	95% Jackknife UCL	39.15
95% Standard Bootstrap UCL	36.95	95% Bootstrap-t UCL	40.89
95% Hall's Bootstrap UCL	38.36	95% Percentile Bootstrap UCL	37.22
95% BCA Bootstrap UCL	37.59		
90% Chebyshev(Mean, Sd) UCL	46.37	95% Chebyshev(Mean, Sd) UCL	54.98
97.5% Chebyshev(Mean, Sd) UCL	66.92	99% Chebyshev(Mean, Sd) UCL	90.37

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 12:36:48 PM
From File	39038_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.7	Mean	14.83
Maximum	21	Median	13.9
SD	3.323	Std. Error of Mean	1.108
Coefficient of Variation	0.224	Skewness	0.913
Mean of logged Data	2.676	SD of logged Data	0.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.89	95% Adjusted-CLT UCL (Chen-1995)	17.02
		95% Modified-t UCL (Johnson-1978)	16.95

Nonparametric Distribution Free UCLs

95% CLT UCL	16.66	95% Jackknife UCL	16.89
95% Standard Bootstrap UCL	16.53	95% Bootstrap-t UCL	17.9
95% Hall's Bootstrap UCL	18.1	95% Percentile Bootstrap UCL	16.66
95% BCA Bootstrap UCL	16.84		
90% Chebyshev(Mean, Sd) UCL	18.16	95% Chebyshev(Mean, Sd) UCL	19.66
97.5% Chebyshev(Mean, Sd) UCL	21.75	99% Chebyshev(Mean, Sd) UCL	25.85

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.39	Mean	11.28
Maximum	16.4	Median	10.8
SD	2.241	Std. Error of Mean	0.747
Coefficient of Variation	0.199	Skewness	1.666
Mean of logged Data	2.408	SD of logged Data	0.181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.67	95% Adjusted-CLT UCL (Chen-1995)	12.95
		95% Modified-t UCL (Johnson-1978)	12.74

Nonparametric Distribution Free UCLs

95% CLT UCL	12.51	95% Jackknife UCL	12.67
95% Standard Bootstrap UCL	12.44	95% Bootstrap-t UCL	13.52
95% Hall's Bootstrap UCL	17.84	95% Percentile Bootstrap UCL	12.52
95% BCA Bootstrap UCL	12.71		
90% Chebyshev(Mean, Sd) UCL	13.52	95% Chebyshev(Mean, Sd) UCL	14.54
97.5% Chebyshev(Mean, Sd) UCL	15.94	99% Chebyshev(Mean, Sd) UCL	18.71

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	39.7	Mean	44.48
Maximum	49.6	Median	43.5
SD	3.206	Std. Error of Mean	1.069
Coefficient of Variation	0.0721	Skewness	0.257
Mean of logged Data	3.793	SD of logged Data	0.0718

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.47	95% Adjusted-CLT UCL (Chen-1995)	46.33
		95% Modified-t UCL (Johnson-1978)	46.48

Nonparametric Distribution Free UCLs

95% CLT UCL	46.24	95% Jackknife UCL	46.47
95% Standard Bootstrap UCL	46.17	95% Bootstrap-t UCL	46.74
95% Hall's Bootstrap UCL	46.38	95% Percentile Bootstrap UCL	46.2
95% BCA Bootstrap UCL	46.2		
90% Chebyshev(Mean, Sd) UCL	47.68	95% Chebyshev(Mean, Sd) UCL	49.14
97.5% Chebyshev(Mean, Sd) UCL	51.15	99% Chebyshev(Mean, Sd) UCL	55.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.765	Mean	1.326
Maximum	3.39	Median	1.11
SD	0.811	Std. Error of Mean	0.27
Coefficient of Variation	0.612	Skewness	2.513
Mean of logged Data	0.171	SD of logged Data	0.453

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.828	95% Adjusted-CLT UCL (Chen-1995)	2.012
		95% Modified-t UCL (Johnson-1978)	1.866

Nonparametric Distribution Free UCLs

95% CLT UCL	1.77	95% Jackknife UCL	1.828
95% Standard Bootstrap UCL	1.744	95% Bootstrap-t UCL	2.712
95% Hall's Bootstrap UCL	3.696	95% Percentile Bootstrap UCL	1.827
95% BCA Bootstrap UCL	2.081		
90% Chebyshev(Mean, Sd) UCL	2.137	95% Chebyshev(Mean, Sd) UCL	2.504
97.5% Chebyshev(Mean, Sd) UCL	3.014	99% Chebyshev(Mean, Sd) UCL	4.016

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.505	Mean	1.388
Maximum	4.8	Median	0.638
SD	1.394	Std. Error of Mean	0.465
Coefficient of Variation	1.005	Skewness	2.181
Mean of logged Data	-0.00238	SD of logged Data	0.807

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.252	95% Adjusted-CLT UCL (Chen-1995)	2.513
		95% Modified-t UCL (Johnson-1978)	2.308

Nonparametric Distribution Free UCLs

95% CLT UCL	2.152	95% Jackknife UCL	2.252
95% Standard Bootstrap UCL	2.114	95% Bootstrap-t UCL	3.176
95% Hall's Bootstrap UCL	4.829	95% Percentile Bootstrap UCL	2.182
95% BCA Bootstrap UCL	2.508		
90% Chebyshev(Mean, Sd) UCL	2.782	95% Chebyshev(Mean, Sd) UCL	3.413
97.5% Chebyshev(Mean, Sd) UCL	4.289	99% Chebyshev(Mean, Sd) UCL	6.011

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.59	Mean	4.211
Maximum	10.7	Median	3.54
SD	2.976	Std. Error of Mean	0.992
Coefficient of Variation	0.707	Skewness	1.507
Mean of logged Data	1.246	SD of logged Data	0.639

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.056	95% Adjusted-CLT UCL (Chen-1995)	6.375
		95% Modified-t UCL (Johnson-1978)	6.139

Nonparametric Distribution Free UCLs

95% CLT UCL	5.843	95% Jackknife UCL	6.056
95% Standard Bootstrap UCL	5.794	95% Bootstrap-t UCL	7.549
95% Hall's Bootstrap UCL	13.8	95% Percentile Bootstrap UCL	5.918
95% BCA Bootstrap UCL	6.303		
90% Chebyshev(Mean, Sd) UCL	7.187	95% Chebyshev(Mean, Sd) UCL	8.535
97.5% Chebyshev(Mean, Sd) UCL	10.41	99% Chebyshev(Mean, Sd) UCL	14.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	28.9
Maximum	91.2	Median	27
SD	28.6	Std. Error of Mean	9.532
Coefficient of Variation	0.99	Skewness	1.318
Mean of logged Data	2.715	SD of logged Data	1.405

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.62	95% Adjusted-CLT UCL (Chen-1995)	49.05
		95% Modified-t UCL (Johnson-1978)	47.32

Nonparametric Distribution Free UCLs

95% CLT UCL	44.58	95% Jackknife UCL	46.62
95% Standard Bootstrap UCL	43.33	95% Bootstrap-t UCL	52.66
95% Hall's Bootstrap UCL	62.04	95% Percentile Bootstrap UCL	45.78
95% BCA Bootstrap UCL	48.21		
90% Chebyshev(Mean, Sd) UCL	57.49	95% Chebyshev(Mean, Sd) UCL	70.45
97.5% Chebyshev(Mean, Sd) UCL	88.42	99% Chebyshev(Mean, Sd) UCL	123.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	34.91
Maximum	112	Median	34.8
SD	34.94	Std. Error of Mean	11.65
Coefficient of Variation	1.001	Skewness	1.376
Mean of logged Data	2.866	SD of logged Data	1.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	56.57	95% Adjusted-CLT UCL (Chen-1995)	59.77
		95% Modified-t UCL (Johnson-1978)	57.46

Nonparametric Distribution Free UCLs

95% CLT UCL	54.06	95% Jackknife UCL	56.57
95% Standard Bootstrap UCL	52.6	95% Bootstrap-t UCL	66.46
95% Hall's Bootstrap UCL	83.19	95% Percentile Bootstrap UCL	54.75
95% BCA Bootstrap UCL	57.97		
90% Chebyshev(Mean, Sd) UCL	69.85	95% Chebyshev(Mean, Sd) UCL	85.68
97.5% Chebyshev(Mean, Sd) UCL	107.6	99% Chebyshev(Mean, Sd) UCL	150.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	44.93
Maximum	133	Median	43.3
SD	42.25	Std. Error of Mean	14.08
Coefficient of Variation	0.94	Skewness	1.07
Mean of logged Data	3.171	SD of logged Data	1.405

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.12	95% Adjusted-CLT UCL (Chen-1995)	73.46
		95% Modified-t UCL (Johnson-1978)	71.96

Nonparametric Distribution Free UCLs

95% CLT UCL	68.1	95% Jackknife UCL	71.12
95% Standard Bootstrap UCL	66.67	95% Bootstrap-t UCL	78.04
95% Hall's Bootstrap UCL	79.56	95% Percentile Bootstrap UCL	67.17
95% BCA Bootstrap UCL	72.12		
90% Chebyshev(Mean, Sd) UCL	87.18	95% Chebyshev(Mean, Sd) UCL	106.3
97.5% Chebyshev(Mean, Sd) UCL	132.9	99% Chebyshev(Mean, Sd) UCL	185.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	24.77
Maximum	71.4	Median	25.1
SD	22.45	Std. Error of Mean	7.484
Coefficient of Variation	0.906	Skewness	1.06
Mean of logged Data	2.697	SD of logged Data	1.203

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.69	95% Adjusted-CLT UCL (Chen-1995)	39.91
		95% Modified-t UCL (Johnson-1978)	39.13

Nonparametric Distribution Free UCLs

95% CLT UCL	37.08	95% Jackknife UCL	38.69
95% Standard Bootstrap UCL	36.25	95% Bootstrap-t UCL	44.57
95% Hall's Bootstrap UCL	43.18	95% Percentile Bootstrap UCL	36.44
95% BCA Bootstrap UCL	39.42		
90% Chebyshev(Mean, Sd) UCL	47.23	95% Chebyshev(Mean, Sd) UCL	57.4
97.5% Chebyshev(Mean, Sd) UCL	71.51	99% Chebyshev(Mean, Sd) UCL	99.24

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	18.04
Maximum	56.6	Median	18
SD	17.45	Std. Error of Mean	5.818
Coefficient of Variation	0.968	Skewness	1.392
Mean of logged Data	2.346	SD of logged Data	1.236

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.85	95% Adjusted-CLT UCL (Chen-1995)	30.49
		95% Modified-t UCL (Johnson-1978)	29.3

Nonparametric Distribution Free UCLs

95% CLT UCL	27.61	95% Jackknife UCL	28.85
95% Standard Bootstrap UCL	26.93	95% Bootstrap-t UCL	33.69
95% Hall's Bootstrap UCL	42.02	95% Percentile Bootstrap UCL	27.71
95% BCA Bootstrap UCL	30.27		
90% Chebyshev(Mean, Sd) UCL	35.49	95% Chebyshev(Mean, Sd) UCL	43.4
97.5% Chebyshev(Mean, Sd) UCL	54.37	99% Chebyshev(Mean, Sd) UCL	75.92

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	38.87
Maximum	128	Median	37
SD	39.73	Std. Error of Mean	13.24
Coefficient of Variation	1.022	Skewness	1.477
Mean of logged Data	2.951	SD of logged Data	1.504

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.5	95% Adjusted-CLT UCL (Chen-1995)	67.62
		95% Modified-t UCL (Johnson-1978)	64.58

Nonparametric Distribution Free UCLs

95% CLT UCL	60.65	95% Jackknife UCL	63.5
95% Standard Bootstrap UCL	59.8	95% Bootstrap-t UCL	73.88
95% Hall's Bootstrap UCL	151.3	95% Percentile Bootstrap UCL	59.56
95% BCA Bootstrap UCL	65.37		
90% Chebyshev(Mean, Sd) UCL	78.6	95% Chebyshev(Mean, Sd) UCL	96.59
97.5% Chebyshev(Mean, Sd) UCL	121.6	99% Chebyshev(Mean, Sd) UCL	170.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	7.343

Maximum	21.2	Median	6.49
SD	5.79	Std. Error of Mean	1.93
Coefficient of Variation	0.788	Skewness	1.975
Mean of logged Data	1.776	SD of logged Data	0.67

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.93	95% Adjusted-CLT UCL (Chen-1995)	11.88
		95% Modified-t UCL (Johnson-1978)	11.14

Nonparametric Distribution Free UCLs

95% CLT UCL	10.52	95% Jackknife UCL	10.93
95% Standard Bootstrap UCL	10.32	95% Bootstrap-t UCL	14.2
95% Hall's Bootstrap UCL	23.11	95% Percentile Bootstrap UCL	10.63
95% BCA Bootstrap UCL	11.75		
90% Chebyshev(Mean, Sd) UCL	13.13	95% Chebyshev(Mean, Sd) UCL	15.76
97.5% Chebyshev(Mean, Sd) UCL	19.4	99% Chebyshev(Mean, Sd) UCL	26.55

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	47.09
Maximum	139	Median	45.6
SD	45.03	Std. Error of Mean	15.01
Coefficient of Variation	0.956	Skewness	0.991
Mean of logged Data	3.103	SD of logged Data	1.595

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	75.01	95% Adjusted-CLT UCL (Chen-1995)	77.08
		95% Modified-t UCL (Johnson-1978)	75.83

Nonparametric Distribution Free UCLs

95% CLT UCL	71.78	95% Jackknife UCL	75.01
95% Standard Bootstrap UCL	70.2	95% Bootstrap-t UCL	82.88
95% Hall's Bootstrap UCL	87.66	95% Percentile Bootstrap UCL	71.44
95% BCA Bootstrap UCL	76.51		

90% Chebyshev(Mean, Sd) UCL	92.12	95% Chebyshev(Mean, Sd) UCL	112.5
97.5% Chebyshev(Mean, Sd) UCL	140.8	99% Chebyshev(Mean, Sd) UCL	196.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.26	Mean	1.311
Maximum	1.38	Median	1.31
SD	0.0344	Std. Error of Mean	0.0115
Coefficient of Variation	0.0263	Skewness	0.673
Mean of logged Data	0.271	SD of logged Data	0.0261

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.332	95% Adjusted-CLT UCL (Chen-1995)	1.333
		95% Modified-t UCL (Johnson-1978)	1.333

Nonparametric Distribution Free UCLs

95% CLT UCL	1.33	95% Jackknife UCL	1.332
95% Standard Bootstrap UCL	1.329	95% Bootstrap-t UCL	1.336
95% Hall's Bootstrap UCL	1.343	95% Percentile Bootstrap UCL	1.329
95% BCA Bootstrap UCL	1.331		
90% Chebyshev(Mean, Sd) UCL	1.346	95% Chebyshev(Mean, Sd) UCL	1.361
97.5% Chebyshev(Mean, Sd) UCL	1.383	99% Chebyshev(Mean, Sd) UCL	1.425

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	29.45
Maximum	86.8	Median	29.7
SD	27.24	Std. Error of Mean	9.08
Coefficient of Variation	0.925	Skewness	1.119
Mean of logged Data	2.832	SD of logged Data	1.263

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.33	95% Adjusted-CLT UCL (Chen-1995)	48
		95% Modified-t UCL (Johnson-1978)	46.9

Nonparametric Distribution Free UCLs

95% CLT UCL	44.38	95% Jackknife UCL	46.33
95% Standard Bootstrap UCL	43.56	95% Bootstrap-t UCL	53.11
95% Hall's Bootstrap UCL	53.6	95% Percentile Bootstrap UCL	44.48
95% BCA Bootstrap UCL	46.42		
90% Chebyshev(Mean, Sd) UCL	56.69	95% Chebyshev(Mean, Sd) UCL	69.03
97.5% Chebyshev(Mean, Sd) UCL	86.15	99% Chebyshev(Mean, Sd) UCL	119.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.15	Mean	2.904
Maximum	10.2	Median	1.76
SD	2.849	Std. Error of Mean	0.95
Coefficient of Variation	0.981	Skewness	2.576
Mean of logged Data	0.803	SD of logged Data	0.689

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.67	95% Adjusted-CLT UCL (Chen-1995)	5.338
		95% Modified-t UCL (Johnson-1978)	4.806

Nonparametric Distribution Free UCLs

95% CLT UCL	4.467	95% Jackknife UCL	4.67
95% Standard Bootstrap UCL	4.382	95% Bootstrap-t UCL	8.169
95% Hall's Bootstrap UCL	10.33	95% Percentile Bootstrap UCL	4.461
95% BCA Bootstrap UCL	5.647		
90% Chebyshev(Mean, Sd) UCL	5.753	95% Chebyshev(Mean, Sd) UCL	7.044
97.5% Chebyshev(Mean, Sd) UCL	8.835	99% Chebyshev(Mean, Sd) UCL	12.35

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.88	Mean	20
Maximum	55.5	Median	17.9
SD	18.04	Std. Error of Mean	6.013
Coefficient of Variation	0.902	Skewness	0.958
Mean of logged Data	2.511	SD of logged Data	1.144

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.18	95% Adjusted-CLT UCL (Chen-1995)	31.94
		95% Modified-t UCL (Johnson-1978)	31.5

Nonparametric Distribution Free UCLs

95% CLT UCL	29.89	95% Jackknife UCL	31.18
95% Standard Bootstrap UCL	29.26	95% Bootstrap-t UCL	34.86
95% Hall's Bootstrap UCL	35.93	95% Percentile Bootstrap UCL	29.65
95% BCA Bootstrap UCL	31.11		
90% Chebyshev(Mean, Sd) UCL	38.03	95% Chebyshev(Mean, Sd) UCL	46.2
97.5% Chebyshev(Mean, Sd) UCL	57.54	99% Chebyshev(Mean, Sd) UCL	79.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	49.7
Maximum	157	Median	48.1
SD	49.08	Std. Error of Mean	16.36
Coefficient of Variation	0.988	Skewness	1.321
Mean of logged Data	3.239	SD of logged Data	1.442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	80.12	95% Adjusted-CLT UCL (Chen-1995)	84.3
		95% Modified-t UCL (Johnson-1978)	81.32

Nonparametric Distribution Free UCLs

95% CLT UCL	76.61	95% Jackknife UCL	80.12
95% Standard Bootstrap UCL	74.57	95% Bootstrap-t UCL	95.14
95% Hall's Bootstrap UCL	104.5	95% Percentile Bootstrap UCL	75.37
95% BCA Bootstrap UCL	83.67		
90% Chebyshev(Mean, Sd) UCL	98.78	95% Chebyshev(Mean, Sd) UCL	121
97.5% Chebyshev(Mean, Sd) UCL	151.9	99% Chebyshev(Mean, Sd) UCL	212.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:11:15 PM
From File	Thompson A_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.8	Mean	14.03
Maximum	15.4	Median	14.6
SD	1.296	Std. Error of Mean	0.432
Coefficient of Variation	0.0924	Skewness	-0.805
Mean of logged Data	2.637	SD of logged Data	0.0956

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.84	95% Adjusted-CLT UCL (Chen-1995)	14.62
		95% Modified-t UCL (Johnson-1978)	14.82

Nonparametric Distribution Free UCLs

95% CLT UCL	14.74	95% Jackknife UCL	14.84
95% Standard Bootstrap UCL	14.7	95% Bootstrap-t UCL	14.7
95% Hall's Bootstrap UCL	14.6	95% Percentile Bootstrap UCL	14.67
95% BCA Bootstrap UCL	14.63		
90% Chebyshev(Mean, Sd) UCL	15.33	95% Chebyshev(Mean, Sd) UCL	15.92
97.5% Chebyshev(Mean, Sd) UCL	16.73	99% Chebyshev(Mean, Sd) UCL	18.33

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.8	Mean	17.08
Maximum	51.4	Median	12.6
SD	13	Std. Error of Mean	4.333
Coefficient of Variation	0.761	Skewness	2.89

Mean of logged Data	2.695	SD of logged Data	0.486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.14	95% Adjusted-CLT UCL (Chen-1995)	28.67
		95% Modified-t UCL (Johnson-1978)	25.83

Nonparametric Distribution Free UCLs

95% CLT UCL	24.21	95% Jackknife UCL	25.14
95% Standard Bootstrap UCL	23.73	95% Bootstrap-t UCL	67.7
95% Hall's Bootstrap UCL	52.32	95% Percentile Bootstrap UCL	25.44
95% BCA Bootstrap UCL	30.1		
90% Chebyshev(Mean, Sd) UCL	30.08	95% Chebyshev(Mean, Sd) UCL	35.97
97.5% Chebyshev(Mean, Sd) UCL	44.14	99% Chebyshev(Mean, Sd) UCL	60.19

Suggested UCL to Use

95% Student's-t UCL	25.14	or 95% Modified-t UCL	25.83

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	45.3	Mean	48.86
Maximum	52	Median	48
SD	2.257	Std. Error of Mean	0.752
Coefficient of Variation	0.0462	Skewness	-0.0105
Mean of logged Data	3.888	SD of logged Data	0.0463

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.25	95% Adjusted-CLT UCL (Chen-1995)	50.09
		95% Modified-t UCL (Johnson-1978)	50.25

Nonparametric Distribution Free UCLs

95% CLT UCL	50.09	95% Jackknife UCL	50.25
95% Standard Bootstrap UCL	50.02	95% Bootstrap-t UCL	50.34
95% Hall's Bootstrap UCL	50.04	95% Percentile Bootstrap UCL	49.99
95% BCA Bootstrap UCL	50.06		
90% Chebyshev(Mean, Sd) UCL	51.11	95% Chebyshev(Mean, Sd) UCL	52.13
97.5% Chebyshev(Mean, Sd) UCL	53.55	99% Chebyshev(Mean, Sd) UCL	56.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.682	Mean	1.234
Maximum	2.38	Median	0.975
SD	0.545	Std. Error of Mean	0.182
Coefficient of Variation	0.441	Skewness	1.361
Mean of logged Data	0.136	SD of logged Data	0.395

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.572	95% Adjusted-CLT UCL (Chen-1995)	1.621
		95% Modified-t UCL (Johnson-1978)	1.586

Nonparametric Distribution Free UCLs

95% CLT UCL	1.533	95% Jackknife UCL	1.572
95% Standard Bootstrap UCL	1.523	95% Bootstrap-t UCL	1.791
95% Hall's Bootstrap UCL	1.628	95% Percentile Bootstrap UCL	1.539
95% BCA Bootstrap UCL	1.59		
90% Chebyshev(Mean, Sd) UCL	1.779	95% Chebyshev(Mean, Sd) UCL	2.026
97.5% Chebyshev(Mean, Sd) UCL	2.368	99% Chebyshev(Mean, Sd) UCL	3.041

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.52	Mean	0.955
Maximum	1.92	Median	0.765
SD	0.535	Std. Error of Mean	0.178
Coefficient of Variation	0.56	Skewness	1.02
Mean of logged Data	-0.174	SD of logged Data	0.525

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.287	95% Adjusted-CLT UCL (Chen-1995)	1.313
		95% Modified-t UCL (Johnson-1978)	1.297

Nonparametric Distribution Free UCLs

95% CLT UCL	1.248	95% Jackknife UCL	1.287
95% Standard Bootstrap UCL	1.227	95% Bootstrap-t UCL	1.441
95% Hall's Bootstrap UCL	1.446	95% Percentile Bootstrap UCL	1.252
95% BCA Bootstrap UCL	1.291		
90% Chebyshev(Mean, Sd) UCL	1.49	95% Chebyshev(Mean, Sd) UCL	1.732
97.5% Chebyshev(Mean, Sd) UCL	2.068	99% Chebyshev(Mean, Sd) UCL	2.729

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.9	Mean	3.819
Maximum	10	Median	2.21
SD	2.678	Std. Error of Mean	0.893
Coefficient of Variation	0.701	Skewness	1.812
Mean of logged Data	1.171	SD of logged Data	0.581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.48	95% Adjusted-CLT UCL (Chen-1995)	5.864
		95% Modified-t UCL (Johnson-1978)	5.57

Nonparametric Distribution Free UCLs

95% CLT UCL	5.288	95% Jackknife UCL	5.48
95% Standard Bootstrap UCL	5.219	95% Bootstrap-t UCL	6.835
95% Hall's Bootstrap UCL	10.04	95% Percentile Bootstrap UCL	5.283
95% BCA Bootstrap UCL	5.761		
90% Chebyshev(Mean, Sd) UCL	6.498	95% Chebyshev(Mean, Sd) UCL	7.711
97.5% Chebyshev(Mean, Sd) UCL	9.395	99% Chebyshev(Mean, Sd) UCL	12.7

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.11	Mean	22.17
Maximum	46.1	Median	22.3
SD	16.92	Std. Error of Mean	5.64
Coefficient of Variation	0.763	Skewness	-0.098
Mean of logged Data	2.539	SD of logged Data	1.362

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.66	95% Adjusted-CLT UCL (Chen-1995)	31.25
		95% Modified-t UCL (Johnson-1978)	32.63

Nonparametric Distribution Free UCLs

95% CLT UCL	31.45	95% Jackknife UCL	32.66
95% Standard Bootstrap UCL	30.88	95% Bootstrap-t UCL	32.31
95% Hall's Bootstrap UCL	30.66	95% Percentile Bootstrap UCL	30.83
95% BCA Bootstrap UCL	30.52		
90% Chebyshev(Mean, Sd) UCL	39.1	95% Chebyshev(Mean, Sd) UCL	46.76
97.5% Chebyshev(Mean, Sd) UCL	57.4	99% Chebyshev(Mean, Sd) UCL	78.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.11	Mean	25.41
Maximum	45.9	Median	27.2
SD	18.7	Std. Error of Mean	6.235
Coefficient of Variation	0.736	Skewness	-0.407
Mean of logged Data	2.643	SD of logged Data	1.431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37	95% Adjusted-CLT UCL (Chen-1995)	34.76
		95% Modified-t UCL (Johnson-1978)	36.86

Nonparametric Distribution Free UCLs

95% CLT UCL	35.66	95% Jackknife UCL	37
95% Standard Bootstrap UCL	35.07	95% Bootstrap-t UCL	36.37
95% Hall's Bootstrap UCL	33.86	95% Percentile Bootstrap UCL	35.41
95% BCA Bootstrap UCL	34.47		
90% Chebyshev(Mean, Sd) UCL	44.11	95% Chebyshev(Mean, Sd) UCL	52.58
97.5% Chebyshev(Mean, Sd) UCL	64.34	99% Chebyshev(Mean, Sd) UCL	87.44

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.245	Mean	35.1
Maximum	62.3	Median	37.2
SD	25.67	Std. Error of Mean	8.558
Coefficient of Variation	0.731	Skewness	-0.389
Mean of logged Data	2.999	SD of logged Data	1.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.01	95% Adjusted-CLT UCL (Chen-1995)	47.99
		95% Modified-t UCL (Johnson-1978)	50.83

Nonparametric Distribution Free UCLs

95% CLT UCL	49.18	95% Jackknife UCL	51.01
95% Standard Bootstrap UCL	48.28	95% Bootstrap-t UCL	50.19
95% Hall's Bootstrap UCL	46.26	95% Percentile Bootstrap UCL	48.54
95% BCA Bootstrap UCL	47.83		
90% Chebyshev(Mean, Sd) UCL	60.77	95% Chebyshev(Mean, Sd) UCL	72.4
97.5% Chebyshev(Mean, Sd) UCL	88.55	99% Chebyshev(Mean, Sd) UCL	120.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.245	Mean	19.21
Maximum	34.3	Median	20.5
SD	12.82	Std. Error of Mean	4.275
Coefficient of Variation	0.668	Skewness	-0.399
Mean of logged Data	2.582	SD of logged Data	1.064

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.16	95% Adjusted-CLT UCL (Chen-1995)	25.63
		95% Modified-t UCL (Johnson-1978)	27.06

Nonparametric Distribution Free UCLs

95% CLT UCL	26.24	95% Jackknife UCL	27.16
95% Standard Bootstrap UCL	25.93	95% Bootstrap-t UCL	26.74
95% Hall's Bootstrap UCL	24.81	95% Percentile Bootstrap UCL	25.84
95% BCA Bootstrap UCL	25.32		
90% Chebyshev(Mean, Sd) UCL	32.03	95% Chebyshev(Mean, Sd) UCL	37.84
97.5% Chebyshev(Mean, Sd) UCL	45.91	99% Chebyshev(Mean, Sd) UCL	61.74

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.11	Mean	15.32

Maximum	27.3	Median	16.3
SD	10.74	Std. Error of Mean	3.58
Coefficient of Variation	0.701	Skewness	-0.326
Mean of logged Data	2.292	SD of logged Data	1.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.97	95% Adjusted-CLT UCL (Chen-1995)	20.79
		95% Modified-t UCL (Johnson-1978)	21.91

Nonparametric Distribution Free UCLs

95% CLT UCL	21.21	95% Jackknife UCL	21.97
95% Standard Bootstrap UCL	20.86	95% Bootstrap-t UCL	21.48
95% Hall's Bootstrap UCL	20.23	95% Percentile Bootstrap UCL	20.81
95% BCA Bootstrap UCL	20.36		
90% Chebyshev(Mean, Sd) UCL	26.06	95% Chebyshev(Mean, Sd) UCL	30.92
97.5% Chebyshev(Mean, Sd) UCL	37.67	99% Chebyshev(Mean, Sd) UCL	50.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.11	Mean	29
Maximum	55.2	Median	28.8
SD	22.37	Std. Error of Mean	7.458
Coefficient of Variation	0.772	Skewness	-0.22
Mean of logged Data	2.724	SD of logged Data	1.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.86	95% Adjusted-CLT UCL (Chen-1995)	40.68
		95% Modified-t UCL (Johnson-1978)	42.77

Nonparametric Distribution Free UCLs

95% CLT UCL	41.26	95% Jackknife UCL	42.86

95% Standard Bootstrap UCL	40.66	95% Bootstrap-t UCL	42.15
95% Hall's Bootstrap UCL	38.76	95% Percentile Bootstrap UCL	40.29
95% BCA Bootstrap UCL	40.33		
90% Chebyshev(Mean, Sd) UCL	51.37	95% Chebyshev(Mean, Sd) UCL	61.5
97.5% Chebyshev(Mean, Sd) UCL	75.57	99% Chebyshev(Mean, Sd) UCL	103.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.245	Mean	5.795
Maximum	9.03	Median	5.47
SD	2.284	Std. Error of Mean	0.761
Coefficient of Variation	0.394	Skewness	0.144
Mean of logged Data	1.682	SD of logged Data	0.418

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.211	95% Adjusted-CLT UCL (Chen-1995)	7.086
		95% Modified-t UCL (Johnson-1978)	7.217

Nonparametric Distribution Free UCLs

95% CLT UCL	7.047	95% Jackknife UCL	7.211
95% Standard Bootstrap UCL	6.983	95% Bootstrap-t UCL	7.253
95% Hall's Bootstrap UCL	6.895	95% Percentile Bootstrap UCL	6.962
95% BCA Bootstrap UCL	7		
90% Chebyshev(Mean, Sd) UCL	8.079	95% Chebyshev(Mean, Sd) UCL	9.113
97.5% Chebyshev(Mean, Sd) UCL	10.55	99% Chebyshev(Mean, Sd) UCL	13.37

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8

		Number of Missing Observations	0
Minimum	2.11	Mean	37.94
Maximum	87.8	Median	33.9
SD	31.87	Std. Error of Mean	10.62
Coefficient of Variation	0.84	Skewness	0.163
Mean of logged Data	2.888	SD of logged Data	1.634

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.7	95% Adjusted-CLT UCL (Chen-1995)	56.03
		95% Modified-t UCL (Johnson-1978)	57.79

Nonparametric Distribution Free UCLs

95% CLT UCL	55.42	95% Jackknife UCL	57.7
95% Standard Bootstrap UCL	54.15	95% Bootstrap-t UCL	58.56
95% Hall's Bootstrap UCL	53.7	95% Percentile Bootstrap UCL	54.77
95% BCA Bootstrap UCL	55.28		
90% Chebyshev(Mean, Sd) UCL	69.81	95% Chebyshev(Mean, Sd) UCL	84.25
97.5% Chebyshev(Mean, Sd) UCL	104.3	99% Chebyshev(Mean, Sd) UCL	143.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.225	Mean	1.296
Maximum	1.325	Median	1.3
SD	0.0288	Std. Error of Mean	0.00959
Coefficient of Variation	0.0222	Skewness	-2.093
Mean of logged Data	0.259	SD of logged Data	0.0226

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.313	95% Adjusted-CLT UCL (Chen-1995)	1.304
		95% Modified-t UCL (Johnson-1978)	1.312

Nonparametric Distribution Free UCLs

95% CLT UCL	1.311	95% Jackknife UCL	1.313
95% Standard Bootstrap UCL	1.311	95% Bootstrap-t UCL	1.308

95% Hall's Bootstrap UCL	1.307	95% Percentile Bootstrap UCL	1.309
95% BCA Bootstrap UCL	1.307		
90% Chebyshev(Mean, Sd) UCL	1.324	95% Chebyshev(Mean, Sd) UCL	1.337
97.5% Chebyshev(Mean, Sd) UCL	1.355	99% Chebyshev(Mean, Sd) UCL	1.391

Suggested UCL to Use

95% Student's-t UCL	1.313	or 95% Modified-t UCL	1.312

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.245	Mean	20.38
Maximum	35.3	Median	22.1
SD	13.7	Std. Error of Mean	4.568
Coefficient of Variation	0.672	Skewness	-0.427
Mean of logged Data	2.625	SD of logged Data	1.095

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.87	95% Adjusted-CLT UCL (Chen-1995)	27.2
		95% Modified-t UCL (Johnson-1978)	28.76

Nonparametric Distribution Free UCLs

95% CLT UCL	27.89	95% Jackknife UCL	28.87
95% Standard Bootstrap UCL	27.48	95% Bootstrap-t UCL	28.49
95% Hall's Bootstrap UCL	26.32	95% Percentile Bootstrap UCL	27.3
95% BCA Bootstrap UCL	26.65		
90% Chebyshev(Mean, Sd) UCL	34.08	95% Chebyshev(Mean, Sd) UCL	40.29
97.5% Chebyshev(Mean, Sd) UCL	48.9	99% Chebyshev(Mean, Sd) UCL	65.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.975	Mean	2.674
Maximum	4.75	Median	2.32
SD	1.255	Std. Error of Mean	0.418
Coefficient of Variation	0.469	Skewness	0.545
Mean of logged Data	0.88	SD of logged Data	0.496

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.452	95% Adjusted-CLT UCL (Chen-1995)	3.443
		95% Modified-t UCL (Johnson-1978)	3.464

Nonparametric Distribution Free UCLs

95% CLT UCL	3.362	95% Jackknife UCL	3.452
95% Standard Bootstrap UCL	3.328	95% Bootstrap-t UCL	3.588
95% Hall's Bootstrap UCL	3.392	95% Percentile Bootstrap UCL	3.322
95% BCA Bootstrap UCL	3.392		
90% Chebyshev(Mean, Sd) UCL	3.928	95% Chebyshev(Mean, Sd) UCL	4.497
97.5% Chebyshev(Mean, Sd) UCL	5.286	99% Chebyshev(Mean, Sd) UCL	6.835

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.245	Mean	17.4
Maximum	48.7	Median	12.4
SD	15.36	Std. Error of Mean	5.121
Coefficient of Variation	0.883	Skewness	1.107
Mean of logged Data	2.438	SD of logged Data	1.04

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.92	95% Adjusted-CLT UCL (Chen-1995)	27.84
		95% Modified-t UCL (Johnson-1978)	27.24

Nonparametric Distribution Free UCLs

95% CLT UCL	25.82	95% Jackknife UCL	26.92
95% Standard Bootstrap UCL	25.29	95% Bootstrap-t UCL	31.44
95% Hall's Bootstrap UCL	33.72	95% Percentile Bootstrap UCL	25.94
95% BCA Bootstrap UCL	27.08		
90% Chebyshev(Mean, Sd) UCL	32.76	95% Chebyshev(Mean, Sd) UCL	39.72
97.5% Chebyshev(Mean, Sd) UCL	49.38	99% Chebyshev(Mean, Sd) UCL	68.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.245	Mean	36.42
Maximum	72.3	Median	34.5
SD	28.53	Std. Error of Mean	9.509
Coefficient of Variation	0.783	Skewness	-0.0697
Mean of logged Data	3.007	SD of logged Data	1.397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.1	95% Adjusted-CLT UCL (Chen-1995)	51.83
		95% Modified-t UCL (Johnson-1978)	54.07

Nonparametric Distribution Free UCLs

95% CLT UCL	52.06	95% Jackknife UCL	54.1
95% Standard Bootstrap UCL	51.37	95% Bootstrap-t UCL	53.36
95% Hall's Bootstrap UCL	49.2	95% Percentile Bootstrap UCL	50.76
95% BCA Bootstrap UCL	51.18		
90% Chebyshev(Mean, Sd) UCL	64.95	95% Chebyshev(Mean, Sd) UCL	77.87
97.5% Chebyshev(Mean, Sd) UCL	95.8	99% Chebyshev(Mean, Sd) UCL	131

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:12:31 PM
From File	Thompson B_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	12.3	Mean	13.7
Maximum	17.5	Median	13.3
SD	1.476	Std. Error of Mean	0.492
Coefficient of Variation	0.108	Skewness	2.579
Mean of logged Data	2.613	SD of logged Data	0.0982

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.62	95% Adjusted-CLT UCL (Chen-1995)	14.96
		95% Modified-t UCL (Johnson-1978)	14.69

Nonparametric Distribution Free UCLs

95% CLT UCL	14.51	95% Jackknife UCL	14.62
95% Standard Bootstrap UCL	14.45	95% Bootstrap-t UCL	16.62
95% Hall's Bootstrap UCL	18.59	95% Percentile Bootstrap UCL	14.6
95% BCA Bootstrap UCL	14.78		
90% Chebyshev(Mean, Sd) UCL	15.18	95% Chebyshev(Mean, Sd) UCL	15.85
97.5% Chebyshev(Mean, Sd) UCL	16.77	99% Chebyshev(Mean, Sd) UCL	18.6

Suggested UCL to Use

95% Student's-t UCL	14.62	or 95% Modified-t UCL	14.69

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.2	Mean	15.89
Maximum	25	Median	16
SD	4.596	Std. Error of Mean	1.532
Coefficient of Variation	0.289	Skewness	0.762
Mean of logged Data	2.729	SD of logged Data	0.286

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.74	95% Adjusted-CLT UCL (Chen-1995)	18.82
		95% Modified-t UCL (Johnson-1978)	18.8

Nonparametric Distribution Free UCLs

95% CLT UCL	18.41	95% Jackknife UCL	18.74
95% Standard Bootstrap UCL	18.25	95% Bootstrap-t UCL	19.33
95% Hall's Bootstrap UCL	21.52	95% Percentile Bootstrap UCL	18.4
95% BCA Bootstrap UCL	18.59		
90% Chebyshev(Mean, Sd) UCL	20.49	95% Chebyshev(Mean, Sd) UCL	22.57
97.5% Chebyshev(Mean, Sd) UCL	25.46	99% Chebyshev(Mean, Sd) UCL	31.13

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	43.8	Mean	47.76
Maximum	52.9	Median	46.2
SD	3.466	Std. Error of Mean	1.155
Coefficient of Variation	0.0726	Skewness	0.67
Mean of logged Data	3.864	SD of logged Data	0.0714

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.9	95% Adjusted-CLT UCL (Chen-1995)	49.93
		95% Modified-t UCL (Johnson-1978)	49.95

Nonparametric Distribution Free UCLs

95% CLT UCL	49.66	95% Jackknife UCL	49.9
95% Standard Bootstrap UCL	49.57	95% Bootstrap-t UCL	50.13
95% Hall's Bootstrap UCL	49.27	95% Percentile Bootstrap UCL	49.56
95% BCA Bootstrap UCL	49.89		
90% Chebyshev(Mean, Sd) UCL	51.22	95% Chebyshev(Mean, Sd) UCL	52.79
97.5% Chebyshev(Mean, Sd) UCL	54.97	99% Chebyshev(Mean, Sd) UCL	59.25

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.941	Mean	1.49
Maximum	2.78	Median	1
SD	0.759	Std. Error of Mean	0.253
Coefficient of Variation	0.509	Skewness	0.959
Mean of logged Data	0.296	SD of logged Data	0.463

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.96	95% Adjusted-CLT UCL (Chen-1995)	1.992
		95% Modified-t UCL (Johnson-1978)	1.973

Nonparametric Distribution Free UCLs

95% CLT UCL	1.906	95% Jackknife UCL	1.96
95% Standard Bootstrap UCL	1.882	95% Bootstrap-t UCL	2.1
95% Hall's Bootstrap UCL	1.748	95% Percentile Bootstrap UCL	1.908
95% BCA Bootstrap UCL	1.944		
90% Chebyshev(Mean, Sd) UCL	2.248	95% Chebyshev(Mean, Sd) UCL	2.592
97.5% Chebyshev(Mean, Sd) UCL	3.069	99% Chebyshev(Mean, Sd) UCL	4.006

Suggested UCL to Use

95% Student's-t UCL	1.96	or 95% Modified-t UCL	1.973

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.505	Mean	0.904
Maximum	2.03	Median	0.53
SD	0.597	Std. Error of Mean	0.199
Coefficient of Variation	0.66	Skewness	1.149
Mean of logged Data	-0.267	SD of logged Data	0.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.274	95% Adjusted-CLT UCL (Chen-1995)	1.313
		95% Modified-t UCL (Johnson-1978)	1.287

Nonparametric Distribution Free UCLs

95% CLT UCL	1.232	95% Jackknife UCL	1.274
95% Standard Bootstrap UCL	1.212	95% Bootstrap-t UCL	1.484
95% Hall's Bootstrap UCL	1.115	95% Percentile Bootstrap UCL	1.24
95% BCA Bootstrap UCL	1.259		
90% Chebyshev(Mean, Sd) UCL	1.501	95% Chebyshev(Mean, Sd) UCL	1.771
97.5% Chebyshev(Mean, Sd) UCL	2.147	99% Chebyshev(Mean, Sd) UCL	2.884

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.771

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.95	Mean	3.358
Maximum	6.9	Median	2.145
SD	1.968	Std. Error of Mean	0.656
Coefficient of Variation	0.586	Skewness	1.09
Mean of logged Data	1.079	SD of logged Data	0.522

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.578	95% Adjusted-CLT UCL (Chen-1995)	4.692
		95% Modified-t UCL (Johnson-1978)	4.618

Nonparametric Distribution Free UCLs

95% CLT UCL	4.437	95% Jackknife UCL	4.578
95% Standard Bootstrap UCL	4.344	95% Bootstrap-t UCL	5.339
95% Hall's Bootstrap UCL	4.208	95% Percentile Bootstrap UCL	4.437
95% BCA Bootstrap UCL	4.539		
90% Chebyshev(Mean, Sd) UCL	5.326	95% Chebyshev(Mean, Sd) UCL	6.218
97.5% Chebyshev(Mean, Sd) UCL	7.455	99% Chebyshev(Mean, Sd) UCL	9.886

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.218

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	22.88
Maximum	57.9	Median	13.8
SD	22.34	Std. Error of Mean	7.448
Coefficient of Variation	0.977	Skewness	0.62
Mean of logged Data	2.453	SD of logged Data	1.402

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.73	95% Adjusted-CLT UCL (Chen-1995)	36.77
		95% Modified-t UCL (Johnson-1978)	36.98

Nonparametric Distribution Free UCLs

95% CLT UCL	35.13	95% Jackknife UCL	36.73
95% Standard Bootstrap UCL	34.56	95% Bootstrap-t UCL	38.1
95% Hall's Bootstrap UCL	33.15	95% Percentile Bootstrap UCL	34.69
95% BCA Bootstrap UCL	35.75		
90% Chebyshev(Mean, Sd) UCL	45.22	95% Chebyshev(Mean, Sd) UCL	55.34
97.5% Chebyshev(Mean, Sd) UCL	69.39	99% Chebyshev(Mean, Sd) UCL	96.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.135	Mean	30.72
Maximum	76.3	Median	16.6
SD	30.52	Std. Error of Mean	10.17
Coefficient of Variation	0.993	Skewness	0.59
Mean of logged Data	2.688	SD of logged Data	1.484

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	49.63	95% Adjusted-CLT UCL (Chen-1995)	49.59
		95% Modified-t UCL (Johnson-1978)	49.97

Nonparametric Distribution Free UCLs

95% CLT UCL	47.45	95% Jackknife UCL	49.63
95% Standard Bootstrap UCL	46.54	95% Bootstrap-t UCL	52.94
95% Hall's Bootstrap UCL	43.55	95% Percentile Bootstrap UCL	46.91
95% BCA Bootstrap UCL	48.44		
90% Chebyshev(Mean, Sd) UCL	61.23	95% Chebyshev(Mean, Sd) UCL	75.06
97.5% Chebyshev(Mean, Sd) UCL	94.24	99% Chebyshev(Mean, Sd) UCL	131.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.285	Mean	42.69
Maximum	99.7	Median	24.7
SD	41.72	Std. Error of Mean	13.91
Coefficient of Variation	0.977	Skewness	0.559
Mean of logged Data	3.055	SD of logged Data	1.435

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	68.55	95% Adjusted-CLT UCL (Chen-1995)	68.33
		95% Modified-t UCL (Johnson-1978)	68.98

Nonparametric Distribution Free UCLs

95% CLT UCL	65.56	95% Jackknife UCL	68.55
95% Standard Bootstrap UCL	64.03	95% Bootstrap-t UCL	72.44
95% Hall's Bootstrap UCL	59.17	95% Percentile Bootstrap UCL	63.57
95% BCA Bootstrap UCL	68.48		
90% Chebyshev(Mean, Sd) UCL	84.4	95% Chebyshev(Mean, Sd) UCL	103.3
97.5% Chebyshev(Mean, Sd) UCL	129.5	99% Chebyshev(Mean, Sd) UCL	181

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.47	Mean	23.64
Maximum	57.3	Median	12.3
SD	22.89	Std. Error of Mean	7.629
Coefficient of Variation	0.968	Skewness	0.634
Mean of logged Data	2.567	SD of logged Data	1.267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.83	95% Adjusted-CLT UCL (Chen-1995)	37.92
		95% Modified-t UCL (Johnson-1978)	38.1

Nonparametric Distribution Free UCLs

95% CLT UCL	36.19	95% Jackknife UCL	37.83
95% Standard Bootstrap UCL	35.42	95% Bootstrap-t UCL	40.75
95% Hall's Bootstrap UCL	32.97	95% Percentile Bootstrap UCL	36.43
95% BCA Bootstrap UCL	36.82		
90% Chebyshev(Mean, Sd) UCL	46.53	95% Chebyshev(Mean, Sd) UCL	56.9
97.5% Chebyshev(Mean, Sd) UCL	71.29	99% Chebyshev(Mean, Sd) UCL	99.55

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	15.29
Maximum	36.5	Median	7.89
SD	14.43	Std. Error of Mean	4.811
Coefficient of Variation	0.944	Skewness	0.611
Mean of logged Data	2.17	SD of logged Data	1.217

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.23	95% Adjusted-CLT UCL (Chen-1995)	24.24
		95% Modified-t UCL (Johnson-1978)	24.39

Nonparametric Distribution Free UCLs

95% CLT UCL	23.2	95% Jackknife UCL	24.23
95% Standard Bootstrap UCL	22.73	95% Bootstrap-t UCL	25.86
95% Hall's Bootstrap UCL	21.39	95% Percentile Bootstrap UCL	23.28
95% BCA Bootstrap UCL	23.77		
90% Chebyshev(Mean, Sd) UCL	29.72	95% Chebyshev(Mean, Sd) UCL	36.25
97.5% Chebyshev(Mean, Sd) UCL	45.33	99% Chebyshev(Mean, Sd) UCL	63.15

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	33.02
Maximum	82.4	Median	18.8
SD	33.5	Std. Error of Mean	11.17
Coefficient of Variation	1.014	Skewness	0.617
Mean of logged Data	2.693	SD of logged Data	1.576

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.78	95% Adjusted-CLT UCL (Chen-1995)	53.84
		95% Modified-t UCL (Johnson-1978)	54.17

Nonparametric Distribution Free UCLs

95% CLT UCL	51.39	95% Jackknife UCL	53.78
95% Standard Bootstrap UCL	50.58	95% Bootstrap-t UCL	58.25
95% Hall's Bootstrap UCL	47.43	95% Percentile Bootstrap UCL	50.19
95% BCA Bootstrap UCL	52.13		
90% Chebyshev(Mean, Sd) UCL	66.52	95% Chebyshev(Mean, Sd) UCL	81.69
97.5% Chebyshev(Mean, Sd) UCL	102.8	99% Chebyshev(Mean, Sd) UCL	144.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.145	Mean	6.963

Maximum	14.6	Median	3.335
SD	5.079	Std. Error of Mean	1.693
Coefficient of Variation	0.729	Skewness	0.867
Mean of logged Data	1.717	SD of logged Data	0.691

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.11	95% Adjusted-CLT UCL (Chen-1995)	10.27
		95% Modified-t UCL (Johnson-1978)	10.19

Nonparametric Distribution Free UCLs

95% CLT UCL	9.747	95% Jackknife UCL	10.11
95% Standard Bootstrap UCL	9.585	95% Bootstrap-t UCL	11.42
95% Hall's Bootstrap UCL	9.027	95% Percentile Bootstrap UCL	9.756
95% BCA Bootstrap UCL	10.12		
90% Chebyshev(Mean, Sd) UCL	12.04	95% Chebyshev(Mean, Sd) UCL	14.34
97.5% Chebyshev(Mean, Sd) UCL	17.54	99% Chebyshev(Mean, Sd) UCL	23.81

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.34

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.135	Mean	38.93
Maximum	99.9	Median	25.3
SD	38.78	Std. Error of Mean	12.93
Coefficient of Variation	0.996	Skewness	0.641
Mean of logged Data	2.9	SD of logged Data	1.538

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.96	95% Adjusted-CLT UCL (Chen-1995)	63.14
		95% Modified-t UCL (Johnson-1978)	63.42

Nonparametric Distribution Free UCLs

95% CLT UCL	60.19	95% Jackknife UCL	62.96
95% Standard Bootstrap UCL	58.81	95% Bootstrap-t UCL	67.1
95% Hall's Bootstrap UCL	55.78	95% Percentile Bootstrap UCL	58.79
95% BCA Bootstrap UCL	61.18		

90% Chebyshev(Mean, Sd) UCL	77.7	95% Chebyshev(Mean, Sd) UCL	95.27
97.5% Chebyshev(Mean, Sd) UCL	119.6	99% Chebyshev(Mean, Sd) UCL	167.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1	Mean	1.271
Maximum	1.335	Median	1.305
SD	0.104	Std. Error of Mean	0.0346
Coefficient of Variation	0.0816	Skewness	-2.764
Mean of logged Data	0.236	SD of logged Data	0.0901

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.335	95% Adjusted-CLT UCL (Chen-1995)	1.293
		95% Modified-t UCL (Johnson-1978)	1.33

Nonparametric Distribution Free UCLs

95% CLT UCL	1.327	95% Jackknife UCL	1.335
95% Standard Bootstrap UCL	1.323	95% Bootstrap-t UCL	1.314
95% Hall's Bootstrap UCL	1.304	95% Percentile Bootstrap UCL	1.312
95% BCA Bootstrap UCL	1.308		
90% Chebyshev(Mean, Sd) UCL	1.374	95% Chebyshev(Mean, Sd) UCL	1.421
97.5% Chebyshev(Mean, Sd) UCL	1.486	99% Chebyshev(Mean, Sd) UCL	1.614

Suggested UCL to Use

95% Student's-t UCL	1.335	or 95% Modified-t UCL	1.33

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.64	Mean	26.14
Maximum	59.6	Median	15.1

SD	24.5	Std. Error of Mean	8.167
Coefficient of Variation	0.937	Skewness	0.528
Mean of logged Data	2.666	SD of logged Data	1.294

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.33	95% Adjusted-CLT UCL (Chen-1995)	41.11
		95% Modified-t UCL (Johnson-1978)	41.57

Nonparametric Distribution Free UCLs

95% CLT UCL	39.57	95% Jackknife UCL	41.33
95% Standard Bootstrap UCL	38.84	95% Bootstrap-t UCL	44.23
95% Hall's Bootstrap UCL	36.05	95% Percentile Bootstrap UCL	39.79
95% BCA Bootstrap UCL	40.32		
90% Chebyshev(Mean, Sd) UCL	50.64	95% Chebyshev(Mean, Sd) UCL	61.74
97.5% Chebyshev(Mean, Sd) UCL	77.15	99% Chebyshev(Mean, Sd) UCL	107.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.54	Mean	2.88
Maximum	5.2	Median	2.03
SD	1.396	Std. Error of Mean	0.465
Coefficient of Variation	0.485	Skewness	0.854
Mean of logged Data	0.961	SD of logged Data	0.456

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.745	95% Adjusted-CLT UCL (Chen-1995)	3.787
		95% Modified-t UCL (Johnson-1978)	3.767

Nonparametric Distribution Free UCLs

95% CLT UCL	3.645	95% Jackknife UCL	3.745
95% Standard Bootstrap UCL	3.601	95% Bootstrap-t UCL	4.12
95% Hall's Bootstrap UCL	3.522	95% Percentile Bootstrap UCL	3.639
95% BCA Bootstrap UCL	3.688		
90% Chebyshev(Mean, Sd) UCL	4.276	95% Chebyshev(Mean, Sd) UCL	4.908

97.5% Chebyshev(Mean, Sd) UCL	5.786	99% Chebyshev(Mean, Sd) UCL	7.509

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	14.83
Maximum	38.7	Median	8.53
SD	14.13	Std. Error of Mean	4.709
Coefficient of Variation	0.953	Skewness	0.872
Mean of logged Data	2.245	SD of logged Data	1.026

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.59	95% Adjusted-CLT UCL (Chen-1995)	24.04
		95% Modified-t UCL (Johnson-1978)	23.82

Nonparametric Distribution Free UCLs

95% CLT UCL	22.58	95% Jackknife UCL	23.59
95% Standard Bootstrap UCL	22.19	95% Bootstrap-t UCL	26.44
95% Hall's Bootstrap UCL	20.59	95% Percentile Bootstrap UCL	22.77
95% BCA Bootstrap UCL	23.94		
90% Chebyshev(Mean, Sd) UCL	28.96	95% Chebyshev(Mean, Sd) UCL	35.36
97.5% Chebyshev(Mean, Sd) UCL	44.24	99% Chebyshev(Mean, Sd) UCL	61.69

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.225	Mean	39.22
Maximum	101	Median	24.5
SD	39.12	Std. Error of Mean	13.04
Coefficient of Variation	0.998	Skewness	0.663
Mean of logged Data	2.953	SD of logged Data	1.452

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.47	95% Adjusted-CLT UCL (Chen-1995)	63.75
		95% Modified-t UCL (Johnson-1978)	63.95

Nonparametric Distribution Free UCLs

95% CLT UCL	60.67	95% Jackknife UCL	63.47
95% Standard Bootstrap UCL	59.87	95% Bootstrap-t UCL	68.39
95% Hall's Bootstrap UCL	56.58	95% Percentile Bootstrap UCL	60.33
95% BCA Bootstrap UCL	61.75		
90% Chebyshev(Mean, Sd) UCL	78.34	95% Chebyshev(Mean, Sd) UCL	96.06
97.5% Chebyshev(Mean, Sd) UCL	120.7	99% Chebyshev(Mean, Sd) UCL	169

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:13:48 PM
From File	Thompson C_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.4	Mean	14.7
Maximum	16.5	Median	14.9
SD	1.296	Std. Error of Mean	0.432
Coefficient of Variation	0.0882	Skewness	-0.49
Mean of logged Data	2.684	SD of logged Data	0.0903

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.5	95% Adjusted-CLT UCL (Chen-1995)	15.34
		95% Modified-t UCL (Johnson-1978)	15.49

Nonparametric Distribution Free UCLs

95% CLT UCL	15.41	95% Jackknife UCL	15.5
95% Standard Bootstrap UCL	15.35	95% Bootstrap-t UCL	15.43
95% Hall's Bootstrap UCL	15.37	95% Percentile Bootstrap UCL	15.36
95% BCA Bootstrap UCL	15.29		
90% Chebyshev(Mean, Sd) UCL	16	95% Chebyshev(Mean, Sd) UCL	16.58
97.5% Chebyshev(Mean, Sd) UCL	17.4	99% Chebyshev(Mean, Sd) UCL	19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11	Mean	14.06
Maximum	19.1	Median	13.9
SD	2.834	Std. Error of Mean	0.945
Coefficient of Variation	0.202	Skewness	0.66

Mean of logged Data	2.626	SD of logged Data	0.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.81	95% Adjusted-CLT UCL (Chen-1995)	15.83
		95% Modified-t UCL (Johnson-1978)	15.85

Nonparametric Distribution Free UCLs

95% CLT UCL	15.61	95% Jackknife UCL	15.81
95% Standard Bootstrap UCL	15.56	95% Bootstrap-t UCL	16.24
95% Hall's Bootstrap UCL	15.92	95% Percentile Bootstrap UCL	15.57
95% BCA Bootstrap UCL	15.64		
90% Chebyshev(Mean, Sd) UCL	16.89	95% Chebyshev(Mean, Sd) UCL	18.17
97.5% Chebyshev(Mean, Sd) UCL	19.96	99% Chebyshev(Mean, Sd) UCL	23.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	48.7	Mean	51.03
Maximum	55.8	Median	50.8
SD	2.087	Std. Error of Mean	0.696
Coefficient of Variation	0.0409	Skewness	1.604
Mean of logged Data	3.932	SD of logged Data	0.0399

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.33	95% Adjusted-CLT UCL (Chen-1995)	52.58
		95% Modified-t UCL (Johnson-1978)	52.39

Nonparametric Distribution Free UCLs

95% CLT UCL	52.18	95% Jackknife UCL	52.33
95% Standard Bootstrap UCL	52.09	95% Bootstrap-t UCL	53.03
95% Hall's Bootstrap UCL	57.76	95% Percentile Bootstrap UCL	52.23
95% BCA Bootstrap UCL	52.57		
90% Chebyshev(Mean, Sd) UCL	53.12	95% Chebyshev(Mean, Sd) UCL	54.07
97.5% Chebyshev(Mean, Sd) UCL	55.38	99% Chebyshev(Mean, Sd) UCL	57.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.93	Mean	1.826
Maximum	3.32	Median	1.1
SD	1.016	Std. Error of Mean	0.339
Coefficient of Variation	0.556	Skewness	0.577
Mean of logged Data	0.464	SD of logged Data	0.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.455	95% Adjusted-CLT UCL (Chen-1995)	2.452
		95% Modified-t UCL (Johnson-1978)	2.466

Nonparametric Distribution Free UCLs

95% CLT UCL	2.383	95% Jackknife UCL	2.455
95% Standard Bootstrap UCL	2.347	95% Bootstrap-t UCL	2.607
95% Hall's Bootstrap UCL	2.294	95% Percentile Bootstrap UCL	2.361
95% BCA Bootstrap UCL	2.436		
90% Chebyshev(Mean, Sd) UCL	2.842	95% Chebyshev(Mean, Sd) UCL	3.302
97.5% Chebyshev(Mean, Sd) UCL	3.94	99% Chebyshev(Mean, Sd) UCL	5.194

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.302

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.525	Mean	1.443
Maximum	4.22	Median	0.535
SD	1.434	Std. Error of Mean	0.478
Coefficient of Variation	0.993	Skewness	1.213
Mean of logged Data	-0.0342	SD of logged Data	0.906

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.332	95% Adjusted-CLT UCL (Chen-1995)	2.436
		95% Modified-t UCL (Johnson-1978)	2.364

Nonparametric Distribution Free UCLs

95% CLT UCL	2.23	95% Jackknife UCL	2.332
95% Standard Bootstrap UCL	2.176	95% Bootstrap-t UCL	2.918
95% Hall's Bootstrap UCL	1.97	95% Percentile Bootstrap UCL	2.205
95% BCA Bootstrap UCL	2.412		
90% Chebyshev(Mean, Sd) UCL	2.877	95% Chebyshev(Mean, Sd) UCL	3.527
97.5% Chebyshev(Mean, Sd) UCL	4.428	99% Chebyshev(Mean, Sd) UCL	6.199

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.527

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.5	Mean	4.032
Maximum	9.2	Median	2.165
SD	2.734	Std. Error of Mean	0.911
Coefficient of Variation	0.678	Skewness	0.92
Mean of logged Data	1.194	SD of logged Data	0.665

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.726	95% Adjusted-CLT UCL (Chen-1995)	5.829
		95% Modified-t UCL (Johnson-1978)	5.773

Nonparametric Distribution Free UCLs

95% CLT UCL	5.531	95% Jackknife UCL	5.726
95% Standard Bootstrap UCL	5.481	95% Bootstrap-t UCL	6.342
95% Hall's Bootstrap UCL	5.496	95% Percentile Bootstrap UCL	5.564
95% BCA Bootstrap UCL	5.707		
90% Chebyshev(Mean, Sd) UCL	6.766	95% Chebyshev(Mean, Sd) UCL	8.004
97.5% Chebyshev(Mean, Sd) UCL	9.723	99% Chebyshev(Mean, Sd) UCL	13.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	26.13
Maximum	60.7	Median	15.9
SD	24.09	Std. Error of Mean	8.029
Coefficient of Variation	0.922	Skewness	0.459
Mean of logged Data	2.578	SD of logged Data	1.46

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.06	95% Adjusted-CLT UCL (Chen-1995)	40.65
		95% Modified-t UCL (Johnson-1978)	41.26

Nonparametric Distribution Free UCLs

95% CLT UCL	39.33	95% Jackknife UCL	41.06
95% Standard Bootstrap UCL	38.17	95% Bootstrap-t UCL	43.21
95% Hall's Bootstrap UCL	39.15	95% Percentile Bootstrap UCL	38.63
95% BCA Bootstrap UCL	38.7		
90% Chebyshev(Mean, Sd) UCL	50.21	95% Chebyshev(Mean, Sd) UCL	61.12
97.5% Chebyshev(Mean, Sd) UCL	76.27	99% Chebyshev(Mean, Sd) UCL	106

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	31.18
Maximum	70.8	Median	19.3
SD	28.47	Std. Error of Mean	9.49
Coefficient of Variation	0.913	Skewness	0.348
Mean of logged Data	2.707	SD of logged Data	1.543

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.82	95% Adjusted-CLT UCL (Chen-1995)	47.96
		95% Modified-t UCL (Johnson-1978)	49.01

Nonparametric Distribution Free UCLs

95% CLT UCL	46.79	95% Jackknife UCL	48.82
95% Standard Bootstrap UCL	45.97	95% Bootstrap-t UCL	50.72
95% Hall's Bootstrap UCL	45.31	95% Percentile Bootstrap UCL	45.66
95% BCA Bootstrap UCL	46.71		
90% Chebyshev(Mean, Sd) UCL	59.65	95% Chebyshev(Mean, Sd) UCL	72.54
97.5% Chebyshev(Mean, Sd) UCL	90.44	99% Chebyshev(Mean, Sd) UCL	125.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	42.32
Maximum	95.8	Median	27.5
SD	38.04	Std. Error of Mean	12.68
Coefficient of Variation	0.899	Skewness	0.358
Mean of logged Data	3.058	SD of logged Data	1.482

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	65.9	95% Adjusted-CLT UCL (Chen-1995)	64.8
		95% Modified-t UCL (Johnson-1978)	66.15

Nonparametric Distribution Free UCLs

95% CLT UCL	63.18	95% Jackknife UCL	65.9
95% Standard Bootstrap UCL	61.84	95% Bootstrap-t UCL	68.86
95% Hall's Bootstrap UCL	62.03	95% Percentile Bootstrap UCL	60.47
95% BCA Bootstrap UCL	63.54		
90% Chebyshev(Mean, Sd) UCL	80.36	95% Chebyshev(Mean, Sd) UCL	97.59
97.5% Chebyshev(Mean, Sd) UCL	121.5	99% Chebyshev(Mean, Sd) UCL	168.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	21.83
Maximum	53.8	Median	14.9
SD	19.2	Std. Error of Mean	6.4
Coefficient of Variation	0.879	Skewness	0.598
Mean of logged Data	2.588	SD of logged Data	1.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.73	95% Adjusted-CLT UCL (Chen-1995)	33.72
		95% Modified-t UCL (Johnson-1978)	33.94

Nonparametric Distribution Free UCLs

95% CLT UCL	32.36	95% Jackknife UCL	33.73
95% Standard Bootstrap UCL	31.75	95% Bootstrap-t UCL	35.69
95% Hall's Bootstrap UCL	32.57	95% Percentile Bootstrap UCL	32.27
95% BCA Bootstrap UCL	32.45		
90% Chebyshev(Mean, Sd) UCL	41.03	95% Chebyshev(Mean, Sd) UCL	49.72
97.5% Chebyshev(Mean, Sd) UCL	61.79	99% Chebyshev(Mean, Sd) UCL	85.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	16.99
Maximum	41.7	Median	9.68
SD	15.36	Std. Error of Mean	5.119
Coefficient of Variation	0.904	Skewness	0.564
Mean of logged Data	2.276	SD of logged Data	1.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.51	95% Adjusted-CLT UCL (Chen-1995)	26.44

		95% Modified-t UCL (Johnson-1978)	26.67

Nonparametric Distribution Free UCLs

95% CLT UCL	25.41	95% Jackknife UCL	26.51
95% Standard Bootstrap UCL	24.89	95% Bootstrap-t UCL	28.21
95% Hall's Bootstrap UCL	25.72	95% Percentile Bootstrap UCL	25.43
95% BCA Bootstrap UCL	26.04		
90% Chebyshev(Mean, Sd) UCL	32.35	95% Chebyshev(Mean, Sd) UCL	39.3
97.5% Chebyshev(Mean, Sd) UCL	48.96	99% Chebyshev(Mean, Sd) UCL	67.93

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	36.38
Maximum	84.9	Median	21.9
SD	33.84	Std. Error of Mean	11.28
Coefficient of Variation	0.93	Skewness	0.379
Mean of logged Data	2.805	SD of logged Data	1.622

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.36	95% Adjusted-CLT UCL (Chen-1995)	56.46
		95% Modified-t UCL (Johnson-1978)	57.59

Nonparametric Distribution Free UCLs

95% CLT UCL	54.93	95% Jackknife UCL	57.36
95% Standard Bootstrap UCL	53.81	95% Bootstrap-t UCL	60.61
95% Hall's Bootstrap UCL	53.66	95% Percentile Bootstrap UCL	53.23
95% BCA Bootstrap UCL	54.6		
90% Chebyshev(Mean, Sd) UCL	70.22	95% Chebyshev(Mean, Sd) UCL	85.55
97.5% Chebyshev(Mean, Sd) UCL	106.8	99% Chebyshev(Mean, Sd) UCL	148.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	7.238
Maximum	18.2	Median	3.33
SD	5.47	Std. Error of Mean	1.823
Coefficient of Variation	0.756	Skewness	1.212
Mean of logged Data	1.748	SD of logged Data	0.703

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.63	95% Adjusted-CLT UCL (Chen-1995)	11.02
		95% Modified-t UCL (Johnson-1978)	10.75

Nonparametric Distribution Free UCLs

95% CLT UCL	10.24	95% Jackknife UCL	10.63
95% Standard Bootstrap UCL	10.07	95% Bootstrap-t UCL	13.45
95% Hall's Bootstrap UCL	11.73	95% Percentile Bootstrap UCL	10.06
95% BCA Bootstrap UCL	10.65		
90% Chebyshev(Mean, Sd) UCL	12.71	95% Chebyshev(Mean, Sd) UCL	15.19
97.5% Chebyshev(Mean, Sd) UCL	18.63	99% Chebyshev(Mean, Sd) UCL	25.38

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	15.19

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	42.15
Maximum	109	Median	26.4
SD	40.64	Std. Error of Mean	13.55
Coefficient of Variation	0.964	Skewness	0.588
Mean of logged Data	2.899	SD of logged Data	1.69

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	67.34	95% Adjusted-CLT UCL (Chen-1995)	67.27
		95% Modified-t UCL (Johnson-1978)	67.78

Nonparametric Distribution Free UCLs

95% CLT UCL	64.43	95% Jackknife UCL	67.34

95% Standard Bootstrap UCL	63.54	95% Bootstrap-t UCL	71.86
95% Hall's Bootstrap UCL	67.4	95% Percentile Bootstrap UCL	63.29
95% BCA Bootstrap UCL	66.82		
90% Chebyshev(Mean, Sd) UCL	82.79	95% Chebyshev(Mean, Sd) UCL	101.2
97.5% Chebyshev(Mean, Sd) UCL	126.8	99% Chebyshev(Mean, Sd) UCL	176.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.235	Mean	1.323
Maximum	1.43	Median	1.315
SD	0.0588	Std. Error of Mean	0.0196
Coefficient of Variation	0.0445	Skewness	0.484
Mean of logged Data	0.279	SD of logged Data	0.0442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.36	95% Adjusted-CLT UCL (Chen-1995)	1.359
		95% Modified-t UCL (Johnson-1978)	1.36

Nonparametric Distribution Free UCLs

95% CLT UCL	1.356	95% Jackknife UCL	1.36
95% Standard Bootstrap UCL	1.354	95% Bootstrap-t UCL	1.366
95% Hall's Bootstrap UCL	1.389	95% Percentile Bootstrap UCL	1.354
95% BCA Bootstrap UCL	1.357		
90% Chebyshev(Mean, Sd) UCL	1.382	95% Chebyshev(Mean, Sd) UCL	1.409
97.5% Chebyshev(Mean, Sd) UCL	1.446	99% Chebyshev(Mean, Sd) UCL	1.518

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	26.67
Maximum	64.1	Median	17.5

SD	23.72	Std. Error of Mean	7.908
Coefficient of Variation	0.889	Skewness	0.553
Mean of logged Data	2.734	SD of logged Data	1.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.38	95% Adjusted-CLT UCL (Chen-1995)	41.24
		95% Modified-t UCL (Johnson-1978)	41.62

Nonparametric Distribution Free UCLs

95% CLT UCL	39.68	95% Jackknife UCL	41.38
95% Standard Bootstrap UCL	38.58	95% Bootstrap-t UCL	44.84
95% Hall's Bootstrap UCL	41.11	95% Percentile Bootstrap UCL	39.53
95% BCA Bootstrap UCL	40.21		
90% Chebyshev(Mean, Sd) UCL	50.4	95% Chebyshev(Mean, Sd) UCL	61.15
97.5% Chebyshev(Mean, Sd) UCL	76.06	99% Chebyshev(Mean, Sd) UCL	105.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.985	Mean	3.893
Maximum	7.65	Median	3.38
SD	2.061	Std. Error of Mean	0.687
Coefficient of Variation	0.529	Skewness	0.561
Mean of logged Data	1.213	SD of logged Data	0.613

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.17	95% Adjusted-CLT UCL (Chen-1995)	5.16
		95% Modified-t UCL (Johnson-1978)	5.192

Nonparametric Distribution Free UCLs

95% CLT UCL	5.023	95% Jackknife UCL	5.17
95% Standard Bootstrap UCL	4.984	95% Bootstrap-t UCL	5.435
95% Hall's Bootstrap UCL	5.435	95% Percentile Bootstrap UCL	5.004
95% BCA Bootstrap UCL	5.074		
90% Chebyshev(Mean, Sd) UCL	5.954	95% Chebyshev(Mean, Sd) UCL	6.887

97.5% Chebyshev(Mean, Sd) UCL	8.183	99% Chebyshev(Mean, Sd) UCL	10.73

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	18.72
Maximum	50.9	Median	10.1
SD	17.23	Std. Error of Mean	5.742
Coefficient of Variation	0.92	Skewness	0.861
Mean of logged Data	2.451	SD of logged Data	1.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.4	95% Adjusted-CLT UCL (Chen-1995)	29.92
		95% Modified-t UCL (Johnson-1978)	29.67

Nonparametric Distribution Free UCLs

95% CLT UCL	28.16	95% Jackknife UCL	29.4
95% Standard Bootstrap UCL	27.46	95% Bootstrap-t UCL	33.93
95% Hall's Bootstrap UCL	28.62	95% Percentile Bootstrap UCL	27.84
95% BCA Bootstrap UCL	29.37		
90% Chebyshev(Mean, Sd) UCL	35.94	95% Chebyshev(Mean, Sd) UCL	43.75
97.5% Chebyshev(Mean, Sd) UCL	54.58	99% Chebyshev(Mean, Sd) UCL	75.85

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	42.76
Maximum	100	Median	26.8
SD	39.34	Std. Error of Mean	13.11
Coefficient of Variation	0.92	Skewness	0.437
Mean of logged Data	3.054	SD of logged Data	1.49

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	67.15	95% Adjusted-CLT UCL (Chen-1995)	66.37
		95% Modified-t UCL (Johnson-1978)	67.47

Nonparametric Distribution Free UCLs

95% CLT UCL	64.33	95% Jackknife UCL	67.15
95% Standard Bootstrap UCL	62.95	95% Bootstrap-t UCL	72.01
95% Hall's Bootstrap UCL	64.52	95% Percentile Bootstrap UCL	64.06
95% BCA Bootstrap UCL	64.03		
90% Chebyshev(Mean, Sd) UCL	82.1	95% Chebyshev(Mean, Sd) UCL	99.92
97.5% Chebyshev(Mean, Sd) UCL	124.7	99% Chebyshev(Mean, Sd) UCL	173.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:15:01 PM
From File	Thompson D_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.85	Mean	12.67
Maximum	14	Median	13.3
SD	1.427	Std. Error of Mean	0.476
Coefficient of Variation	0.113	Skewness	-1.33
Mean of logged Data	2.533	SD of logged Data	0.121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.56	95% Adjusted-CLT UCL (Chen-1995)	13.23
		95% Modified-t UCL (Johnson-1978)	13.52

Nonparametric Distribution Free UCLs

95% CLT UCL	13.45	95% Jackknife UCL	13.56
95% Standard Bootstrap UCL	13.41	95% Bootstrap-t UCL	13.36
95% Hall's Bootstrap UCL	13.25	95% Percentile Bootstrap UCL	13.39
95% BCA Bootstrap UCL	13.22		
90% Chebyshev(Mean, Sd) UCL	14.1	95% Chebyshev(Mean, Sd) UCL	14.75
97.5% Chebyshev(Mean, Sd) UCL	15.64	99% Chebyshev(Mean, Sd) UCL	17.41

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.14	Mean	13.59
Maximum	27.7	Median	12.7
SD	5.557	Std. Error of Mean	1.852
Coefficient of Variation	0.409	Skewness	2.473

Mean of logged Data	2.556	SD of logged Data	0.322

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.04	95% Adjusted-CLT UCL (Chen-1995)	18.27
		95% Modified-t UCL (Johnson-1978)	17.29

Nonparametric Distribution Free UCLs

95% CLT UCL	16.64	95% Jackknife UCL	17.04
95% Standard Bootstrap UCL	16.57	95% Bootstrap-t UCL	21.63
95% Hall's Bootstrap UCL	29.33	95% Percentile Bootstrap UCL	16.79
95% BCA Bootstrap UCL	17.89		
90% Chebyshev(Mean, Sd) UCL	19.15	95% Chebyshev(Mean, Sd) UCL	21.67
97.5% Chebyshev(Mean, Sd) UCL	25.16	99% Chebyshev(Mean, Sd) UCL	32.02

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	31.7	Mean	43.39
Maximum	48.3	Median	44.8
SD	5.033	Std. Error of Mean	1.678
Coefficient of Variation	0.116	Skewness	-1.755
Mean of logged Data	3.763	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.51	95% Adjusted-CLT UCL (Chen-1995)	45.1
		95% Modified-t UCL (Johnson-1978)	46.35

Nonparametric Distribution Free UCLs

95% CLT UCL	46.15	95% Jackknife UCL	46.51
95% Standard Bootstrap UCL	45.93	95% Bootstrap-t UCL	45.73
95% Hall's Bootstrap UCL	45.4	95% Percentile Bootstrap UCL	45.8
95% BCA Bootstrap UCL	45.42		
90% Chebyshev(Mean, Sd) UCL	48.42	95% Chebyshev(Mean, Sd) UCL	50.7
97.5% Chebyshev(Mean, Sd) UCL	53.87	99% Chebyshev(Mean, Sd) UCL	60.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.51	Mean	4.36
Maximum	9.95	Median	1.82
SD	4.011	Std. Error of Mean	1.337
Coefficient of Variation	0.92	Skewness	0.861
Mean of logged Data	1.105	SD of logged Data	0.878

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.846	95% Adjusted-CLT UCL (Chen-1995)	6.969
		95% Modified-t UCL (Johnson-1978)	6.91

Nonparametric Distribution Free UCLs

95% CLT UCL	6.559	95% Jackknife UCL	6.846
95% Standard Bootstrap UCL	6.398	95% Bootstrap-t UCL	7.244
95% Hall's Bootstrap UCL	5.623	95% Percentile Bootstrap UCL	6.25
95% BCA Bootstrap UCL	7.041		
90% Chebyshev(Mean, Sd) UCL	8.371	95% Chebyshev(Mean, Sd) UCL	10.19
97.5% Chebyshev(Mean, Sd) UCL	12.71	99% Chebyshev(Mean, Sd) UCL	17.66

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.19

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.474	Mean	2.171
Maximum	5.3	Median	0.525
SD	2.274	Std. Error of Mean	0.758

Coefficient of Variation	1.047	Skewness	0.793
Mean of logged Data	0.213	SD of logged Data	1.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.581	95% Adjusted-CLT UCL (Chen-1995)	3.632
		95% Modified-t UCL (Johnson-1978)	3.614

Nonparametric Distribution Free UCLs

95% CLT UCL	3.418	95% Jackknife UCL	3.581
95% Standard Bootstrap UCL	3.356	95% Bootstrap-t UCL	3.8
95% Hall's Bootstrap UCL	2.951	95% Percentile Bootstrap UCL	3.276
95% BCA Bootstrap UCL	3.617		
90% Chebyshev(Mean, Sd) UCL	4.446	95% Chebyshev(Mean, Sd) UCL	5.476
97.5% Chebyshev(Mean, Sd) UCL	6.905	99% Chebyshev(Mean, Sd) UCL	9.714

Suggested UCL to Use

95% Hall's Bootstrap UCL	2.951

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	8.648
Maximum	21.55	Median	3.07
SD	9.313	Std. Error of Mean	3.104
Coefficient of Variation	1.077	Skewness	0.851
Mean of logged Data	1.595	SD of logged Data	1.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.42	95% Adjusted-CLT UCL (Chen-1995)	14.69
		95% Modified-t UCL (Johnson-1978)	14.57

Nonparametric Distribution Free UCLs

95% CLT UCL	13.75	95% Jackknife UCL	14.42
95% Standard Bootstrap UCL	13.45	95% Bootstrap-t UCL	15.2
95% Hall's Bootstrap UCL	11.62	95% Percentile Bootstrap UCL	13.15
95% BCA Bootstrap UCL	14.71		

90% Chebyshev(Mean, Sd) UCL	17.96	95% Chebyshev(Mean, Sd) UCL	22.18
97.5% Chebyshev(Mean, Sd) UCL	28.03	99% Chebyshev(Mean, Sd) UCL	39.53

Suggested UCL to Use

95% Hall's Bootstrap UCL	11.62

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	26.07
Maximum	59.8	Median	18.5
SD	24.15	Std. Error of Mean	8.051
Coefficient of Variation	0.927	Skewness	0.473
Mean of logged Data	2.563	SD of logged Data	1.483

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.04	95% Adjusted-CLT UCL (Chen-1995)	40.66
		95% Modified-t UCL (Johnson-1978)	41.25

Nonparametric Distribution Free UCLs

95% CLT UCL	39.31	95% Jackknife UCL	41.04
95% Standard Bootstrap UCL	38.74	95% Bootstrap-t UCL	42.77
95% Hall's Bootstrap UCL	36.99	95% Percentile Bootstrap UCL	38.57
95% BCA Bootstrap UCL	39.42		
90% Chebyshev(Mean, Sd) UCL	50.22	95% Chebyshev(Mean, Sd) UCL	61.16
97.5% Chebyshev(Mean, Sd) UCL	76.35	99% Chebyshev(Mean, Sd) UCL	106.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	30.19
Maximum	70.2	Median	20.5
SD	28.02	Std. Error of Mean	9.34

Coefficient of Variation	0.928	Skewness	0.458
Mean of logged Data	2.667	SD of logged Data	1.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.56	95% Adjusted-CLT UCL (Chen-1995)	47.07
		95% Modified-t UCL (Johnson-1978)	47.79

Nonparametric Distribution Free UCLs

95% CLT UCL	45.55	95% Jackknife UCL	47.56
95% Standard Bootstrap UCL	44.72	95% Bootstrap-t UCL	50.41
95% Hall's Bootstrap UCL	42.89	95% Percentile Bootstrap UCL	45.45
95% BCA Bootstrap UCL	46.59		
90% Chebyshev(Mean, Sd) UCL	58.21	95% Chebyshev(Mean, Sd) UCL	70.9
97.5% Chebyshev(Mean, Sd) UCL	88.52	99% Chebyshev(Mean, Sd) UCL	123.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.96	Mean	40.75
Maximum	91.5	Median	29
SD	37.55	Std. Error of Mean	12.52
Coefficient of Variation	0.922	Skewness	0.441
Mean of logged Data	3.007	SD of logged Data	1.491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.02	95% Adjusted-CLT UCL (Chen-1995)	63.3
		95% Modified-t UCL (Johnson-1978)	64.33

Nonparametric Distribution Free UCLs

95% CLT UCL	61.34	95% Jackknife UCL	64.02
95% Standard Bootstrap UCL	59.6	95% Bootstrap-t UCL	67.12
95% Hall's Bootstrap UCL	56.83	95% Percentile Bootstrap UCL	61.09
95% BCA Bootstrap UCL	62.99		
90% Chebyshev(Mean, Sd) UCL	78.3	95% Chebyshev(Mean, Sd) UCL	95.31
97.5% Chebyshev(Mean, Sd) UCL	118.9	99% Chebyshev(Mean, Sd) UCL	165.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.88	Mean	23.23
Maximum	51.2	Median	16
SD	20.62	Std. Error of Mean	6.875
Coefficient of Variation	0.888	Skewness	0.5
Mean of logged Data	2.609	SD of logged Data	1.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.02	95% Adjusted-CLT UCL (Chen-1995)	35.76
		95% Modified-t UCL (Johnson-1978)	36.21

Nonparametric Distribution Free UCLs

95% CLT UCL	34.54	95% Jackknife UCL	36.02
95% Standard Bootstrap UCL	34.11	95% Bootstrap-t UCL	38.11
95% Hall's Bootstrap UCL	31.92	95% Percentile Bootstrap UCL	34.15
95% BCA Bootstrap UCL	34.45		
90% Chebyshev(Mean, Sd) UCL	43.86	95% Chebyshev(Mean, Sd) UCL	53.2
97.5% Chebyshev(Mean, Sd) UCL	66.16	99% Chebyshev(Mean, Sd) UCL	91.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	15.43
Maximum	35.7	Median	10.5
SD	13.53	Std. Error of Mean	4.51
Coefficient of Variation	0.877	Skewness	0.53
Mean of logged Data	2.211	SD of logged Data	1.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.82	95% Adjusted-CLT UCL (Chen-1995)	23.7
		95% Modified-t UCL (Johnson-1978)	23.95

Nonparametric Distribution Free UCLs

95% CLT UCL	22.85	95% Jackknife UCL	23.82
95% Standard Bootstrap UCL	22.33	95% Bootstrap-t UCL	24.15
95% Hall's Bootstrap UCL	21.93	95% Percentile Bootstrap UCL	22.52
95% BCA Bootstrap UCL	22.73		
90% Chebyshev(Mean, Sd) UCL	28.96	95% Chebyshev(Mean, Sd) UCL	35.09
97.5% Chebyshev(Mean, Sd) UCL	43.6	99% Chebyshev(Mean, Sd) UCL	60.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	36.4
Maximum	87.2	Median	23.6
SD	35.13	Std. Error of Mean	11.71
Coefficient of Variation	0.965	Skewness	0.523
Mean of logged Data	2.779	SD of logged Data	1.646

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.18	95% Adjusted-CLT UCL (Chen-1995)	57.84
		95% Modified-t UCL (Johnson-1978)	58.52

Nonparametric Distribution Free UCLs

95% CLT UCL	55.66	95% Jackknife UCL	58.18
95% Standard Bootstrap UCL	54.54	95% Bootstrap-t UCL	62.16
95% Hall's Bootstrap UCL	51.73	95% Percentile Bootstrap UCL	54.5
95% BCA Bootstrap UCL	56.8		
90% Chebyshev(Mean, Sd) UCL	71.53	95% Chebyshev(Mean, Sd) UCL	87.44
97.5% Chebyshev(Mean, Sd) UCL	109.5	99% Chebyshev(Mean, Sd) UCL	152.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.96	Mean	13.17
Maximum	33.15	Median	3.72
SD	14.41	Std. Error of Mean	4.804
Coefficient of Variation	1.094	Skewness	0.855
Mean of logged Data	1.995	SD of logged Data	1.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.1	95% Adjusted-CLT UCL (Chen-1995)	22.54
		95% Modified-t UCL (Johnson-1978)	22.33

Nonparametric Distribution Free UCLs

95% CLT UCL	21.07	95% Jackknife UCL	22.1
95% Standard Bootstrap UCL	20.55	95% Bootstrap-t UCL	23.56
95% Hall's Bootstrap UCL	17.74	95% Percentile Bootstrap UCL	19.85
95% BCA Bootstrap UCL	22.7		
90% Chebyshev(Mean, Sd) UCL	27.58	95% Chebyshev(Mean, Sd) UCL	34.11
97.5% Chebyshev(Mean, Sd) UCL	43.17	99% Chebyshev(Mean, Sd) UCL	60.97

Suggested UCL to Use

95% Hall's Bootstrap UCL	17.74

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	44.58
Maximum	99.2	Median	36.7
SD	41.23	Std. Error of Mean	13.74
Coefficient of Variation	0.925	Skewness	0.367
Mean of logged Data	2.939	SD of logged Data	1.745

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	70.14	95% Adjusted-CLT UCL (Chen-1995)	68.98
		95% Modified-t UCL (Johnson-1978)	70.42

Nonparametric Distribution Free UCLs

95% CLT UCL	67.18	95% Jackknife UCL	70.14
95% Standard Bootstrap UCL	66.17	95% Bootstrap-t UCL	73.69
95% Hall's Bootstrap UCL	62.96	95% Percentile Bootstrap UCL	64.98
95% BCA Bootstrap UCL	67.37		
90% Chebyshev(Mean, Sd) UCL	85.81	95% Chebyshev(Mean, Sd) UCL	104.5
97.5% Chebyshev(Mean, Sd) UCL	130.4	99% Chebyshev(Mean, Sd) UCL	181.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.185	Mean	5.145
Maximum	13.25	Median	1.3
SD	5.846	Std. Error of Mean	1.949
Coefficient of Variation	1.136	Skewness	0.863
Mean of logged Data	1.002	SD of logged Data	1.169

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.769	95% Adjusted-CLT UCL (Chen-1995)	8.949
		95% Modified-t UCL (Johnson-1978)	8.862

Nonparametric Distribution Free UCLs

95% CLT UCL	8.35	95% Jackknife UCL	8.769
95% Standard Bootstrap UCL	8.094	95% Bootstrap-t UCL	9.32
95% Hall's Bootstrap UCL	6.978	95% Percentile Bootstrap UCL	7.903
95% BCA Bootstrap UCL	8.939		
90% Chebyshev(Mean, Sd) UCL	10.99	95% Chebyshev(Mean, Sd) UCL	13.64
97.5% Chebyshev(Mean, Sd) UCL	17.31	99% Chebyshev(Mean, Sd) UCL	24.53

Suggested UCL to Use

95% Hall's Bootstrap UCL	6.978

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.18	Mean	23.31
Maximum	50.7	Median	16
SD	20.26	Std. Error of Mean	6.755
Coefficient of Variation	0.869	Skewness	0.402
Mean of logged Data	2.594	SD of logged Data	1.282

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.87	95% Adjusted-CLT UCL (Chen-1995)	35.39
		95% Modified-t UCL (Johnson-1978)	36.02

Nonparametric Distribution Free UCLs

95% CLT UCL	34.42	95% Jackknife UCL	35.87
95% Standard Bootstrap UCL	33.89	95% Bootstrap-t UCL	37.35
95% Hall's Bootstrap UCL	32.35	95% Percentile Bootstrap UCL	33.82
95% BCA Bootstrap UCL	34.51		
90% Chebyshev(Mean, Sd) UCL	43.57	95% Chebyshev(Mean, Sd) UCL	52.75
97.5% Chebyshev(Mean, Sd) UCL	65.49	99% Chebyshev(Mean, Sd) UCL	90.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.93	Mean	7.238
Maximum	11.5	Median	6.23
SD	2.495	Std. Error of Mean	0.832
Coefficient of Variation	0.345	Skewness	0.837
Mean of logged Data	1.93	SD of logged Data	0.325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.784	95% Adjusted-CLT UCL (Chen-1995)	8.854
		95% Modified-t UCL (Johnson-1978)	8.823

Nonparametric Distribution Free UCLs

95% CLT UCL	8.606	95% Jackknife UCL	8.784
95% Standard Bootstrap UCL	8.528	95% Bootstrap-t UCL	9.186
95% Hall's Bootstrap UCL	8.294	95% Percentile Bootstrap UCL	8.604
95% BCA Bootstrap UCL	8.828		
90% Chebyshev(Mean, Sd) UCL	9.733	95% Chebyshev(Mean, Sd) UCL	10.86
97.5% Chebyshev(Mean, Sd) UCL	12.43	99% Chebyshev(Mean, Sd) UCL	15.51

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.96	Mean	18.71
Maximum	39.2	Median	16.1
SD	15.58	Std. Error of Mean	5.193
Coefficient of Variation	0.833	Skewness	0.395
Mean of logged Data	2.476	SD of logged Data	1.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.37	95% Adjusted-CLT UCL (Chen-1995)	27.98
		95% Modified-t UCL (Johnson-1978)	28.48

Nonparametric Distribution Free UCLs

95% CLT UCL	27.25	95% Jackknife UCL	28.37
95% Standard Bootstrap UCL	26.65	95% Bootstrap-t UCL	29.84
95% Hall's Bootstrap UCL	25.43	95% Percentile Bootstrap UCL	27.34
95% BCA Bootstrap UCL	26.98		
90% Chebyshev(Mean, Sd) UCL	34.29	95% Chebyshev(Mean, Sd) UCL	41.35
97.5% Chebyshev(Mean, Sd) UCL	51.14	99% Chebyshev(Mean, Sd) UCL	70.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.96	Mean	46.92
Maximum	108	Median	34.1
SD	43.81	Std. Error of Mean	14.6
Coefficient of Variation	0.934	Skewness	0.466
Mean of logged Data	3.102	SD of logged Data	1.559

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	74.08	95% Adjusted-CLT UCL (Chen-1995)	73.37
		95% Modified-t UCL (Johnson-1978)	74.46

Nonparametric Distribution Free UCLs

95% CLT UCL	70.95	95% Jackknife UCL	74.08
95% Standard Bootstrap UCL	69.38	95% Bootstrap-t UCL	78.08
95% Hall's Bootstrap UCL	65.9	95% Percentile Bootstrap UCL	70.11
95% BCA Bootstrap UCL	72.5		
90% Chebyshev(Mean, Sd) UCL	90.74	95% Chebyshev(Mean, Sd) UCL	110.6
97.5% Chebyshev(Mean, Sd) UCL	138.1	99% Chebyshev(Mean, Sd) UCL	192.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:16:09 PM
From File	Thompson E_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.5	Mean	13.54
Maximum	16.9	Median	13.1
SD	1.332	Std. Error of Mean	0.444
Coefficient of Variation	0.0984	Skewness	2.411
Mean of logged Data	2.602	SD of logged Data	0.0907

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.37	95% Adjusted-CLT UCL (Chen-1995)	14.66
		95% Modified-t UCL (Johnson-1978)	14.43

Nonparametric Distribution Free UCLs

95% CLT UCL	14.27	95% Jackknife UCL	14.37
95% Standard Bootstrap UCL	14.23	95% Bootstrap-t UCL	15.62
95% Hall's Bootstrap UCL	17.39	95% Percentile Bootstrap UCL	14.27
95% BCA Bootstrap UCL	14.67		
90% Chebyshev(Mean, Sd) UCL	14.88	95% Chebyshev(Mean, Sd) UCL	15.48
97.5% Chebyshev(Mean, Sd) UCL	16.32	99% Chebyshev(Mean, Sd) UCL	17.96

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.3	Mean	14.2
Maximum	18.1	Median	13.7
SD	3.131	Std. Error of Mean	1.044
Coefficient of Variation	0.22	Skewness	-0.118
Mean of logged Data	2.631	SD of logged Data	0.228

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.14	95% Adjusted-CLT UCL (Chen-1995)	15.87
		95% Modified-t UCL (Johnson-1978)	16.13

Nonparametric Distribution Free UCLs

95% CLT UCL	15.92	95% Jackknife UCL	16.14
95% Standard Bootstrap UCL	15.8	95% Bootstrap-t UCL	16.05
95% Hall's Bootstrap UCL	15.61	95% Percentile Bootstrap UCL	15.8
95% BCA Bootstrap UCL	15.78		
90% Chebyshev(Mean, Sd) UCL	17.33	95% Chebyshev(Mean, Sd) UCL	18.75
97.5% Chebyshev(Mean, Sd) UCL	20.72	99% Chebyshev(Mean, Sd) UCL	24.58

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	42.1	Mean	44.38
Maximum	46.1	Median	44.4
SD	1.459	Std. Error of Mean	0.486
Coefficient of Variation	0.0329	Skewness	-0.38
Mean of logged Data	3.792	SD of logged Data	0.0331

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.28	95% Adjusted-CLT UCL (Chen-1995)	45.11
		95% Modified-t UCL (Johnson-1978)	45.27

Nonparametric Distribution Free UCLs

95% CLT UCL	45.18	95% Jackknife UCL	45.28
95% Standard Bootstrap UCL	45.14	95% Bootstrap-t UCL	45.2
95% Hall's Bootstrap UCL	45.06	95% Percentile Bootstrap UCL	45.11
95% BCA Bootstrap UCL	45.06		
90% Chebyshev(Mean, Sd) UCL	45.84	95% Chebyshev(Mean, Sd) UCL	46.5
97.5% Chebyshev(Mean, Sd) UCL	47.42	99% Chebyshev(Mean, Sd) UCL	49.22

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.985	Mean	6.936
Maximum	9.95	Median	9.9
SD	4.459	Std. Error of Mean	1.486
Coefficient of Variation	0.643	Skewness	-0.857
Mean of logged Data	1.526	SD of logged Data	1.152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.7	95% Adjusted-CLT UCL (Chen-1995)	8.927
		95% Modified-t UCL (Johnson-1978)	9.629

Nonparametric Distribution Free UCLs

95% CLT UCL	9.381	95% Jackknife UCL	9.7
95% Standard Bootstrap UCL	9.218	95% Bootstrap-t UCL	8.83
95% Hall's Bootstrap UCL	8.502	95% Percentile Bootstrap UCL	8.927
95% BCA Bootstrap UCL	8.921		
90% Chebyshev(Mean, Sd) UCL	11.39	95% Chebyshev(Mean, Sd) UCL	13.41
97.5% Chebyshev(Mean, Sd) UCL	16.22	99% Chebyshev(Mean, Sd) UCL	21.73

Suggested UCL to Use

95% Hall's Bootstrap UCL	8.502

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	4
		Number of Missing Observations	0

Minimum	0.525	Mean	3.704
Maximum	5.3	Median	5.3
SD	2.382	Std. Error of Mean	0.794
Coefficient of Variation	0.643	Skewness	-0.857
Mean of logged Data	0.898	SD of logged Data	1.152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.18	95% Adjusted-CLT UCL (Chen-1995)	4.767
		95% Modified-t UCL (Johnson-1978)	5.142

Nonparametric Distribution Free UCLs

95% CLT UCL	5.01	95% Jackknife UCL	5.18
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.086	95% Chebyshev(Mean, Sd) UCL	7.164
97.5% Chebyshev(Mean, Sd) UCL	8.662	99% Chebyshev(Mean, Sd) UCL	11.6

Suggested UCL to Use
Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	14.1
Maximum	24.5	Median	16.8
SD	9.395	Std. Error of Mean	3.132
Coefficient of Variation	0.666	Skewness	-0.544
Mean of logged Data	2.245	SD of logged Data	1.121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.93	95% Adjusted-CLT UCL (Chen-1995)	18.65
		95% Modified-t UCL (Johnson-1978)	19.83

Nonparametric Distribution Free UCLs

95% CLT UCL	19.26	95% Jackknife UCL	19.93
95% Standard Bootstrap UCL	18.95	95% Bootstrap-t UCL	19.18
95% Hall's Bootstrap UCL	17.94	95% Percentile Bootstrap UCL	19.06
95% BCA Bootstrap UCL	18.43		
90% Chebyshev(Mean, Sd) UCL	23.5	95% Chebyshev(Mean, Sd) UCL	27.76
97.5% Chebyshev(Mean, Sd) UCL	33.66	99% Chebyshev(Mean, Sd) UCL	45.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.86	Mean	102.1
Maximum	335	Median	92.5
SD	106.8	Std. Error of Mean	35.61
Coefficient of Variation	1.046	Skewness	1.312
Mean of logged Data	3.488	SD of logged Data	2.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	168.3	95% Adjusted-CLT UCL (Chen-1995)	177.3
		95% Modified-t UCL (Johnson-1978)	170.9

Nonparametric Distribution Free UCLs

95% CLT UCL	160.7	95% Jackknife UCL	168.3
95% Standard Bootstrap UCL	157.5	95% Bootstrap-t UCL	197.6
95% Hall's Bootstrap UCL	280.7	95% Percentile Bootstrap UCL	161.2
95% BCA Bootstrap UCL	169.2		
90% Chebyshev(Mean, Sd) UCL	208.9	95% Chebyshev(Mean, Sd) UCL	257.3
97.5% Chebyshev(Mean, Sd) UCL	324.5	99% Chebyshev(Mean, Sd) UCL	456.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.8	Mean	120.3
Maximum	396	Median	110
SD	126.4	Std. Error of Mean	42.14
Coefficient of Variation	1.051	Skewness	1.31
Mean of logged Data	3.586	SD of logged Data	2.243

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	198.7	95% Adjusted-CLT UCL (Chen-1995)	209.3
		95% Modified-t UCL (Johnson-1978)	201.8

Nonparametric Distribution Free UCLs

95% CLT UCL	189.6	95% Jackknife UCL	198.7
95% Standard Bootstrap UCL	186.6	95% Bootstrap-t UCL	234.1
95% Hall's Bootstrap UCL	333.2	95% Percentile Bootstrap UCL	187.2
95% BCA Bootstrap UCL	207		
90% Chebyshev(Mean, Sd) UCL	246.8	95% Chebyshev(Mean, Sd) UCL	304
97.5% Chebyshev(Mean, Sd) UCL	383.5	99% Chebyshev(Mean, Sd) UCL	539.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.66	Mean	156.6
Maximum	479	Median	143
SD	156.8	Std. Error of Mean	52.28
Coefficient of Variation	1.002	Skewness	1.029
Mean of logged Data	3.933	SD of logged Data	2.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	253.8	95% Adjusted-CLT UCL (Chen-1995)	261.8
		95% Modified-t UCL (Johnson-1978)	256.8

Nonparametric Distribution Free UCLs

95% CLT UCL	242.6	95% Jackknife UCL	253.8

95% Standard Bootstrap UCL	238	95% Bootstrap-t UCL	293.3
95% Hall's Bootstrap UCL	291.3	95% Percentile Bootstrap UCL	243.8
95% BCA Bootstrap UCL	260.6		
90% Chebyshev(Mean, Sd) UCL	313.4	95% Chebyshev(Mean, Sd) UCL	384.5
97.5% Chebyshev(Mean, Sd) UCL	483.1	99% Chebyshev(Mean, Sd) UCL	676.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.29	Mean	80.36
Maximum	234	Median	79.2
SD	76.2	Std. Error of Mean	25.4
Coefficient of Variation	0.948	Skewness	0.894
Mean of logged Data	3.515	SD of logged Data	1.782

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	127.6	95% Adjusted-CLT UCL (Chen-1995)	130.2
		95% Modified-t UCL (Johnson-1978)	128.9

Nonparametric Distribution Free UCLs

95% CLT UCL	122.1	95% Jackknife UCL	127.6
95% Standard Bootstrap UCL	120.1	95% Bootstrap-t UCL	137
95% Hall's Bootstrap UCL	142.5	95% Percentile Bootstrap UCL	123.9
95% BCA Bootstrap UCL	124.8		
90% Chebyshev(Mean, Sd) UCL	156.6	95% Chebyshev(Mean, Sd) UCL	191.1
97.5% Chebyshev(Mean, Sd) UCL	239	99% Chebyshev(Mean, Sd) UCL	333.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	64.26
Maximum	211	Median	57.7

SD	67.59	Std. Error of Mean	22.53
Coefficient of Variation	1.052	Skewness	1.319
Mean of logged Data	3.191	SD of logged Data	1.879

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	106.2	95% Adjusted-CLT UCL (Chen-1995)	111.9
		95% Modified-t UCL (Johnson-1978)	107.8

Nonparametric Distribution Free UCLs

95% CLT UCL	101.3	95% Jackknife UCL	106.2
95% Standard Bootstrap UCL	99.33	95% Bootstrap-t UCL	122.8
95% Hall's Bootstrap UCL	160.5	95% Percentile Bootstrap UCL	101.9
95% BCA Bootstrap UCL	112.5		
90% Chebyshev(Mean, Sd) UCL	131.8	95% Chebyshev(Mean, Sd) UCL	162.5
97.5% Chebyshev(Mean, Sd) UCL	205	99% Chebyshev(Mean, Sd) UCL	288.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.17	Mean	135.5
Maximum	454	Median	129
SD	143.1	Std. Error of Mean	47.7
Coefficient of Variation	1.056	Skewness	1.408
Mean of logged Data	3.749	SD of logged Data	2.18

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	224.2	95% Adjusted-CLT UCL (Chen-1995)	237.9
		95% Modified-t UCL (Johnson-1978)	227.9

Nonparametric Distribution Free UCLs

95% CLT UCL	214	95% Jackknife UCL	224.2
95% Standard Bootstrap UCL	209.5	95% Bootstrap-t UCL	263.4
95% Hall's Bootstrap UCL	536.4	95% Percentile Bootstrap UCL	214.8
95% BCA Bootstrap UCL	226.8		
90% Chebyshev(Mean, Sd) UCL	278.6	95% Chebyshev(Mean, Sd) UCL	343.4

97.5% Chebyshev(Mean, Sd) UCL	433.4	99% Chebyshev(Mean, Sd) UCL	610.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.29	Mean	26.16
Maximum	60.2	Median	32.95
SD	19.25	Std. Error of Mean	6.417
Coefficient of Variation	0.736	Skewness	0.119
Mean of logged Data	2.797	SD of logged Data	1.218

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.09	95% Adjusted-CLT UCL (Chen-1995)	36.98
		95% Modified-t UCL (Johnson-1978)	38.13

Nonparametric Distribution Free UCLs

95% CLT UCL	36.71	95% Jackknife UCL	38.09
95% Standard Bootstrap UCL	36.29	95% Bootstrap-t UCL	37.99
95% Hall's Bootstrap UCL	37.51	95% Percentile Bootstrap UCL	35.79
95% BCA Bootstrap UCL	35.77		
90% Chebyshev(Mean, Sd) UCL	45.41	95% Chebyshev(Mean, Sd) UCL	54.13
97.5% Chebyshev(Mean, Sd) UCL	66.23	99% Chebyshev(Mean, Sd) UCL	90

Suggested UCL to Use

95% Hall's Bootstrap UCL	37.51

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.145	Mean	163.6
Maximum	531	Median	145
SD	169.9	Std. Error of Mean	56.65
Coefficient of Variation	1.039	Skewness	1.265

Mean of logged Data	3.912	SD of logged Data	2.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	268.9	95% Adjusted-CLT UCL (Chen-1995)	282.3
		95% Modified-t UCL (Johnson-1978)	272.9

Nonparametric Distribution Free UCLs

95% CLT UCL	256.8	95% Jackknife UCL	268.9
95% Standard Bootstrap UCL	253	95% Bootstrap-t UCL	314.3
95% Hall's Bootstrap UCL	396.3	95% Percentile Bootstrap UCL	256
95% BCA Bootstrap UCL	282		
90% Chebyshev(Mean, Sd) UCL	333.5	95% Chebyshev(Mean, Sd) UCL	410.5
97.5% Chebyshev(Mean, Sd) UCL	517.4	99% Chebyshev(Mean, Sd) UCL	727.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.315	Mean	9.251
Maximum	13.3	Median	13.2
SD	5.948	Std. Error of Mean	1.983
Coefficient of Variation	0.643	Skewness	-0.857
Mean of logged Data	1.814	SD of logged Data	1.152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.94	95% Adjusted-CLT UCL (Chen-1995)	11.91
		95% Modified-t UCL (Johnson-1978)	12.84

Nonparametric Distribution Free UCLs

95% CLT UCL	12.51	95% Jackknife UCL	12.94
95% Standard Bootstrap UCL	12.33	95% Bootstrap-t UCL	11.78
95% Hall's Bootstrap UCL	11.35	95% Percentile Bootstrap UCL	11.91
95% BCA Bootstrap UCL	11.9		
90% Chebyshev(Mean, Sd) UCL	15.2	95% Chebyshev(Mean, Sd) UCL	17.89
97.5% Chebyshev(Mean, Sd) UCL	21.63	99% Chebyshev(Mean, Sd) UCL	28.98

Suggested UCL to Use

95% Hall's Bootstrap UCL	11.35

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.29	Mean	88.27
Maximum	254	Median	82.9
SD	84.05	Std. Error of Mean	28.02
Coefficient of Variation	0.952	Skewness	0.839
Mean of logged Data	3.575	SD of logged Data	1.829

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	140.4	95% Adjusted-CLT UCL (Chen-1995)	142.7
		95% Modified-t UCL (Johnson-1978)	141.7

Nonparametric Distribution Free UCLs

95% CLT UCL	134.3	95% Jackknife UCL	140.4
95% Standard Bootstrap UCL	131.3	95% Bootstrap-t UCL	151.6
95% Hall's Bootstrap UCL	158.8	95% Percentile Bootstrap UCL	131.5
95% BCA Bootstrap UCL	139.8		
90% Chebyshev(Mean, Sd) UCL	172.3	95% Chebyshev(Mean, Sd) UCL	210.4
97.5% Chebyshev(Mean, Sd) UCL	263.2	99% Chebyshev(Mean, Sd) UCL	367

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.956	Mean	7.315
Maximum	13.5	Median	9.85
SD	5.045	Std. Error of Mean	1.682

Coefficient of Variation	0.69	Skewness	-0.439
Mean of logged Data	1.547	SD of logged Data	1.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.44	95% Adjusted-CLT UCL (Chen-1995)	9.818
		95% Modified-t UCL (Johnson-1978)	10.4

Nonparametric Distribution Free UCLs

95% CLT UCL	10.08	95% Jackknife UCL	10.44
95% Standard Bootstrap UCL	9.919	95% Bootstrap-t UCL	10.24
95% Hall's Bootstrap UCL	9.533	95% Percentile Bootstrap UCL	9.894
95% BCA Bootstrap UCL	9.728		
90% Chebyshev(Mean, Sd) UCL	12.36	95% Chebyshev(Mean, Sd) UCL	14.65
97.5% Chebyshev(Mean, Sd) UCL	17.82	99% Chebyshev(Mean, Sd) UCL	24.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.29	Mean	64.42
Maximum	195	Median	52.4
SD	63.04	Std. Error of Mean	21.01
Coefficient of Variation	0.979	Skewness	1.083
Mean of logged Data	3.355	SD of logged Data	1.671

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	103.5	95% Adjusted-CLT UCL (Chen-1995)	107.1
		95% Modified-t UCL (Johnson-1978)	104.8

Nonparametric Distribution Free UCLs

95% CLT UCL	98.99	95% Jackknife UCL	103.5
95% Standard Bootstrap UCL	96.89	95% Bootstrap-t UCL	120.9
95% Hall's Bootstrap UCL	145.7	95% Percentile Bootstrap UCL	97.7

95% BCA Bootstrap UCL	103.9		
90% Chebyshev(Mean, Sd) UCL	127.5	95% Chebyshev(Mean, Sd) UCL	156
97.5% Chebyshev(Mean, Sd) UCL	195.6	99% Chebyshev(Mean, Sd) UCL	273.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.72	Mean	168.4
Maximum	574	Median	154
SD	180.1	Std. Error of Mean	60.05
Coefficient of Variation	1.07	Skewness	1.483
Mean of logged Data	3.963	SD of logged Data	2.179

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	280	95% Adjusted-CLT UCL (Chen-1995)	298.8
		95% Modified-t UCL (Johnson-1978)	285

Nonparametric Distribution Free UCLs

95% CLT UCL	267.1	95% Jackknife UCL	280
95% Standard Bootstrap UCL	260.3	95% Bootstrap-t UCL	328.1
95% Hall's Bootstrap UCL	712.1	95% Percentile Bootstrap UCL	266.1
95% BCA Bootstrap UCL	289.8		
90% Chebyshev(Mean, Sd) UCL	348.5	95% Chebyshev(Mean, Sd) UCL	430.1
97.5% Chebyshev(Mean, Sd) UCL	543.4	99% Chebyshev(Mean, Sd) UCL	765.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:17:38 PM
From File	Thompson F_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	10.5	Mean	12.27
Maximum	14	Median	12
SD	1.345	Std. Error of Mean	0.448
Coefficient of Variation	0.11	Skewness	0.0752
Mean of logged Data	2.502	SD of logged Data	0.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.1	95% Adjusted-CLT UCL (Chen-1995)	13.02
		95% Modified-t UCL (Johnson-1978)	13.1

Nonparametric Distribution Free UCLs

95% CLT UCL	13	95% Jackknife UCL	13.1
95% Standard Bootstrap UCL	12.96	95% Bootstrap-t UCL	13.07
95% Hall's Bootstrap UCL	12.94	95% Percentile Bootstrap UCL	12.93
95% BCA Bootstrap UCL	13.01		
90% Chebyshev(Mean, Sd) UCL	13.61	95% Chebyshev(Mean, Sd) UCL	14.22
97.5% Chebyshev(Mean, Sd) UCL	15.07	99% Chebyshev(Mean, Sd) UCL	16.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.1	Mean	13.59
Maximum	17	Median	13.6
SD	2.218	Std. Error of Mean	0.739
Coefficient of Variation	0.163	Skewness	0.418
Mean of logged Data	2.598	SD of logged Data	0.161

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.96	95% Adjusted-CLT UCL (Chen-1995)	14.91
		95% Modified-t UCL (Johnson-1978)	14.98

Nonparametric Distribution Free UCLs

95% CLT UCL	14.8	95% Jackknife UCL	14.96
95% Standard Bootstrap UCL	14.72	95% Bootstrap-t UCL	15.04
95% Hall's Bootstrap UCL	15.13	95% Percentile Bootstrap UCL	14.82
95% BCA Bootstrap UCL	14.76		
90% Chebyshev(Mean, Sd) UCL	15.81	95% Chebyshev(Mean, Sd) UCL	16.81
97.5% Chebyshev(Mean, Sd) UCL	18.21	99% Chebyshev(Mean, Sd) UCL	20.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.8	Mean	45.31
Maximum	49.5	Median	43.7
SD	3.226	Std. Error of Mean	1.075
Coefficient of Variation	0.0712	Skewness	0.28
Mean of logged Data	3.811	SD of logged Data	0.0708

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.31	95% Adjusted-CLT UCL (Chen-1995)	47.19
		95% Modified-t UCL (Johnson-1978)	47.33

Nonparametric Distribution Free UCLs

95% CLT UCL	47.08	95% Jackknife UCL	47.31
95% Standard Bootstrap UCL	46.96	95% Bootstrap-t UCL	47.37
95% Hall's Bootstrap UCL	46.8	95% Percentile Bootstrap UCL	46.96
95% BCA Bootstrap UCL	47.06		
90% Chebyshev(Mean, Sd) UCL	48.54	95% Chebyshev(Mean, Sd) UCL	50
97.5% Chebyshev(Mean, Sd) UCL	52.03	99% Chebyshev(Mean, Sd) UCL	56.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.08	Mean	4.157
Maximum	6.39	Median	3.73
SD	1.154	Std. Error of Mean	0.385
Coefficient of Variation	0.278	Skewness	1.258
Mean of logged Data	1.394	SD of logged Data	0.253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.872	95% Adjusted-CLT UCL (Chen-1995)	4.962
		95% Modified-t UCL (Johnson-1978)	4.899

Nonparametric Distribution Free UCLs

95% CLT UCL	4.789	95% Jackknife UCL	4.872
95% Standard Bootstrap UCL	4.746	95% Bootstrap-t UCL	5.621
95% Hall's Bootstrap UCL	5.534	95% Percentile Bootstrap UCL	4.768
95% BCA Bootstrap UCL	4.917		
90% Chebyshev(Mean, Sd) UCL	5.31	95% Chebyshev(Mean, Sd) UCL	5.833
97.5% Chebyshev(Mean, Sd) UCL	6.558	99% Chebyshev(Mean, Sd) UCL	7.983

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.498	Mean	5.274
Maximum	12.3	Median	4.34
SD	4.641	Std. Error of Mean	1.547
Coefficient of Variation	0.88	Skewness	0.494
Mean of logged Data	1.062	SD of logged Data	1.362

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.15	95% Adjusted-CLT UCL (Chen-1995)	8.09
		95% Modified-t UCL (Johnson-1978)	8.193

Nonparametric Distribution Free UCLs

95% CLT UCL	7.818	95% Jackknife UCL	8.15
95% Standard Bootstrap UCL	7.697	95% Bootstrap-t UCL	8.638
95% Hall's Bootstrap UCL	7.974	95% Percentile Bootstrap UCL	7.718
95% BCA Bootstrap UCL	7.767		
90% Chebyshev(Mean, Sd) UCL	9.915	95% Chebyshev(Mean, Sd) UCL	12.02
97.5% Chebyshev(Mean, Sd) UCL	14.93	99% Chebyshev(Mean, Sd) UCL	20.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.02	Mean	15.49
Maximum	32	Median	12.1
SD	13.15	Std. Error of Mean	4.382
Coefficient of Variation	0.849	Skewness	0.422
Mean of logged Data	2.237	SD of logged Data	1.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.64	95% Adjusted-CLT UCL (Chen-1995)	23.36
		95% Modified-t UCL (Johnson-1978)	23.74

Nonparametric Distribution Free UCLs

95% CLT UCL	22.7	95% Jackknife UCL	23.64
95% Standard Bootstrap UCL	22.14	95% Bootstrap-t UCL	24.38
95% Hall's Bootstrap UCL	21.25	95% Percentile Bootstrap UCL	22.98
95% BCA Bootstrap UCL	23		
90% Chebyshev(Mean, Sd) UCL	28.64	95% Chebyshev(Mean, Sd) UCL	34.59
97.5% Chebyshev(Mean, Sd) UCL	42.86	99% Chebyshev(Mean, Sd) UCL	59.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.31	Mean	125.5
Maximum	271	Median	109
SD	115.2	Std. Error of Mean	38.4
Coefficient of Variation	0.918	Skewness	0.355
Mean of logged Data	3.911	SD of logged Data	1.875

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	196.9	95% Adjusted-CLT UCL (Chen-1995)	193.6
		95% Modified-t UCL (Johnson-1978)	197.7

Nonparametric Distribution Free UCLs

95% CLT UCL	188.7	95% Jackknife UCL	196.9
95% Standard Bootstrap UCL	184.9	95% Bootstrap-t UCL	205.4
95% Hall's Bootstrap UCL	176.2	95% Percentile Bootstrap UCL	184.2
95% BCA Bootstrap UCL	191.1		
90% Chebyshev(Mean, Sd) UCL	240.7	95% Chebyshev(Mean, Sd) UCL	292.9
97.5% Chebyshev(Mean, Sd) UCL	365.4	99% Chebyshev(Mean, Sd) UCL	507.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.81	Mean	148.6
Maximum	328	Median	139
SD	132.9	Std. Error of Mean	44.31
Coefficient of Variation	0.895	Skewness	0.303
Mean of logged Data	4.101	SD of logged Data	1.86

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	231	95% Adjusted-CLT UCL (Chen-1995)	226.3
		95% Modified-t UCL (Johnson-1978)	231.7

Nonparametric Distribution Free UCLs

95% CLT UCL	221.5	95% Jackknife UCL	231
95% Standard Bootstrap UCL	216.5	95% Bootstrap-t UCL	239.9
95% Hall's Bootstrap UCL	211.4	95% Percentile Bootstrap UCL	218.5
95% BCA Bootstrap UCL	219.8		
90% Chebyshev(Mean, Sd) UCL	281.5	95% Chebyshev(Mean, Sd) UCL	341.7
97.5% Chebyshev(Mean, Sd) UCL	425.3	99% Chebyshev(Mean, Sd) UCL	589.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.15	Mean	205.7
Maximum	468	Median	185
SD	187	Std. Error of Mean	62.34
Coefficient of Variation	0.909	Skewness	0.349
Mean of logged Data	4.43	SD of logged Data	1.842

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	321.6	95% Adjusted-CLT UCL (Chen-1995)	316
		95% Modified-t UCL (Johnson-1978)	322.8

Nonparametric Distribution Free UCLs

95% CLT UCL	308.2	95% Jackknife UCL	321.6
95% Standard Bootstrap UCL	302.5	95% Bootstrap-t UCL	330.3
95% Hall's Bootstrap UCL	296.8	95% Percentile Bootstrap UCL	302.5
95% BCA Bootstrap UCL	302.3		
90% Chebyshev(Mean, Sd) UCL	392.7	95% Chebyshev(Mean, Sd) UCL	477.4
97.5% Chebyshev(Mean, Sd) UCL	595	99% Chebyshev(Mean, Sd) UCL	825.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	98.5
Maximum	230	Median	83.2
SD	92.63	Std. Error of Mean	30.88
Coefficient of Variation	0.94	Skewness	0.445
Mean of logged Data	3.706	SD of logged Data	1.784

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	155.9	95% Adjusted-CLT UCL (Chen-1995)	154.2
		95% Modified-t UCL (Johnson-1978)	156.7

Nonparametric Distribution Free UCLs

95% CLT UCL	149.3	95% Jackknife UCL	155.9
95% Standard Bootstrap UCL	146.1	95% Bootstrap-t UCL	162.3
95% Hall's Bootstrap UCL	140.8	95% Percentile Bootstrap UCL	145.3
95% BCA Bootstrap UCL	152.6		
90% Chebyshev(Mean, Sd) UCL	191.1	95% Chebyshev(Mean, Sd) UCL	233.1
97.5% Chebyshev(Mean, Sd) UCL	291.3	99% Chebyshev(Mean, Sd) UCL	405.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	82.96
Maximum	183	Median	68.3
SD	77.09	Std. Error of Mean	25.7
Coefficient of Variation	0.929	Skewness	0.403
Mean of logged Data	3.535	SD of logged Data	1.799

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	130.8	95% Adjusted-CLT UCL (Chen-1995)	128.9
		95% Modified-t UCL (Johnson-1978)	131.3

Nonparametric Distribution Free UCLs

95% CLT UCL	125.2	95% Jackknife UCL	130.8
95% Standard Bootstrap UCL	123.4	95% Bootstrap-t UCL	139.1
95% Hall's Bootstrap UCL	116.4	95% Percentile Bootstrap UCL	123.4
95% BCA Bootstrap UCL	123.1		
90% Chebyshev(Mean, Sd) UCL	160.1	95% Chebyshev(Mean, Sd) UCL	195
97.5% Chebyshev(Mean, Sd) UCL	243.4	99% Chebyshev(Mean, Sd) UCL	338.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	152.3
Maximum	336	Median	134
SD	137.4	Std. Error of Mean	45.8
Coefficient of Variation	0.902	Skewness	0.326
Mean of logged Data	4.129	SD of logged Data	1.848

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	237.5	95% Adjusted-CLT UCL (Chen-1995)	233
		95% Modified-t UCL (Johnson-1978)	238.3

Nonparametric Distribution Free UCLs

95% CLT UCL	227.7	95% Jackknife UCL	237.5
95% Standard Bootstrap UCL	223.8	95% Bootstrap-t UCL	240.9
95% Hall's Bootstrap UCL	220.5	95% Percentile Bootstrap UCL	223.5
95% BCA Bootstrap UCL	227.5		
90% Chebyshev(Mean, Sd) UCL	289.7	95% Chebyshev(Mean, Sd) UCL	352
97.5% Chebyshev(Mean, Sd) UCL	438.3	99% Chebyshev(Mean, Sd) UCL	608

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	30.8

Maximum	68.8	Median	25.3
SD	27.61	Std. Error of Mean	9.204
Coefficient of Variation	0.897	Skewness	0.482
Mean of logged Data	2.833	SD of logged Data	1.334

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.91	95% Adjusted-CLT UCL (Chen-1995)	47.51
		95% Modified-t UCL (Johnson-1978)	48.16

Nonparametric Distribution Free UCLs

95% CLT UCL	45.93	95% Jackknife UCL	47.91
95% Standard Bootstrap UCL	45.23	95% Bootstrap-t UCL	49.52
95% Hall's Bootstrap UCL	43.08	95% Percentile Bootstrap UCL	44.62
95% BCA Bootstrap UCL	46.21		
90% Chebyshev(Mean, Sd) UCL	58.41	95% Chebyshev(Mean, Sd) UCL	70.91
97.5% Chebyshev(Mean, Sd) UCL	88.27	99% Chebyshev(Mean, Sd) UCL	122.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.17	Mean	181.3
Maximum	390	Median	163
SD	163.1	Std. Error of Mean	54.37
Coefficient of Variation	0.899	Skewness	0.292
Mean of logged Data	4.278	SD of logged Data	1.891

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	282.5	95% Adjusted-CLT UCL (Chen-1995)	276.4
		95% Modified-t UCL (Johnson-1978)	283.3

Nonparametric Distribution Free UCLs

95% CLT UCL	270.8	95% Jackknife UCL	282.5
95% Standard Bootstrap UCL	267.1	95% Bootstrap-t UCL	287.4
95% Hall's Bootstrap UCL	256.1	95% Percentile Bootstrap UCL	268.1
95% BCA Bootstrap UCL	270.1		

90% Chebyshev(Mean, Sd) UCL	344.5	95% Chebyshev(Mean, Sd) UCL	418.3
97.5% Chebyshev(Mean, Sd) UCL	520.9	99% Chebyshev(Mean, Sd) UCL	722.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.245	Mean	2.489
Maximum	4.94	Median	1.69
SD	1.57	Std. Error of Mean	0.523
Coefficient of Variation	0.631	Skewness	0.971
Mean of logged Data	0.753	SD of logged Data	0.579

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.462	95% Adjusted-CLT UCL (Chen-1995)	3.531
		95% Modified-t UCL (Johnson-1978)	3.491

Nonparametric Distribution Free UCLs

95% CLT UCL	3.35	95% Jackknife UCL	3.462
95% Standard Bootstrap UCL	3.304	95% Bootstrap-t UCL	4.036
95% Hall's Bootstrap UCL	3.141	95% Percentile Bootstrap UCL	3.322
95% BCA Bootstrap UCL	3.407		
90% Chebyshev(Mean, Sd) UCL	4.059	95% Chebyshev(Mean, Sd) UCL	4.77
97.5% Chebyshev(Mean, Sd) UCL	5.757	99% Chebyshev(Mean, Sd) UCL	7.695

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.77

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.36	Mean	124
Maximum	286	Median	103
SD	117.4	Std. Error of Mean	39.13
Coefficient of Variation	0.947	Skewness	0.443
Mean of logged Data	3.874	SD of logged Data	1.887

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	196.7	95% Adjusted-CLT UCL (Chen-1995)	194.5
		95% Modified-t UCL (Johnson-1978)	197.7

Nonparametric Distribution Free UCLs

95% CLT UCL	188.3	95% Jackknife UCL	196.7
95% Standard Bootstrap UCL	183.8	95% Bootstrap-t UCL	205.8
95% Hall's Bootstrap UCL	176.8	95% Percentile Bootstrap UCL	189.2
95% BCA Bootstrap UCL	193		
90% Chebyshev(Mean, Sd) UCL	241.3	95% Chebyshev(Mean, Sd) UCL	294.5
97.5% Chebyshev(Mean, Sd) UCL	368.3	99% Chebyshev(Mean, Sd) UCL	513.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.66	Mean	6.615
Maximum	13.6	Median	4.81
SD	3.633	Std. Error of Mean	1.211
Coefficient of Variation	0.549	Skewness	1.648
Mean of logged Data	1.788	SD of logged Data	0.441

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.867	95% Adjusted-CLT UCL (Chen-1995)	9.318
		95% Modified-t UCL (Johnson-1978)	8.978

Nonparametric Distribution Free UCLs

95% CLT UCL	8.607	95% Jackknife UCL	8.867
95% Standard Bootstrap UCL	8.509	95% Bootstrap-t UCL	96.57
95% Hall's Bootstrap UCL	50.65	95% Percentile Bootstrap UCL	8.559
95% BCA Bootstrap UCL	9.399		
90% Chebyshev(Mean, Sd) UCL	10.25	95% Chebyshev(Mean, Sd) UCL	11.89
97.5% Chebyshev(Mean, Sd) UCL	14.18	99% Chebyshev(Mean, Sd) UCL	18.66

Suggested UCL to Use

95% Student's-t UCL	8.867	or 95% Modified-t UCL	8.978

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	71.59
Maximum	153	Median	59.6
SD	64.54	Std. Error of Mean	21.51
Coefficient of Variation	0.901	Skewness	0.327
Mean of logged Data	3.446	SD of logged Data	1.716

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	111.6	95% Adjusted-CLT UCL (Chen-1995)	109.5
		95% Modified-t UCL (Johnson-1978)	112

Nonparametric Distribution Free UCLs

95% CLT UCL	107	95% Jackknife UCL	111.6
95% Standard Bootstrap UCL	104.1	95% Bootstrap-t UCL	115.2
95% Hall's Bootstrap UCL	101.1	95% Percentile Bootstrap UCL	104.8
95% BCA Bootstrap UCL	107.8		
90% Chebyshev(Mean, Sd) UCL	136.1	95% Chebyshev(Mean, Sd) UCL	165.4
97.5% Chebyshev(Mean, Sd) UCL	205.9	99% Chebyshev(Mean, Sd) UCL	285.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.3	Mean	181.7
Maximum	387	Median	164
SD	161.9	Std. Error of Mean	53.96
Coefficient of Variation	0.891	Skewness	0.266
Mean of logged Data	4.289	SD of logged Data	1.883

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	282	95% Adjusted-CLT UCL (Chen-1995)	275.6
		95% Modified-t UCL (Johnson-1978)	282.8

Nonparametric Distribution Free UCLs

95% CLT UCL	270.5	95% Jackknife UCL	282
95% Standard Bootstrap UCL	265.2	95% Bootstrap-t UCL	289.7
95% Hall's Bootstrap UCL	255.2	95% Percentile Bootstrap UCL	266.5
95% BCA Bootstrap UCL	265.6		
90% Chebyshev(Mean, Sd) UCL	343.6	95% Chebyshev(Mean, Sd) UCL	416.9
97.5% Chebyshev(Mean, Sd) UCL	518.7	99% Chebyshev(Mean, Sd) UCL	718.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:18:54 PM
From File	Thompson G_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	8.81	Mean	10.81
Maximum	13	Median	10.4
SD	1.3	Std. Error of Mean	0.433
Coefficient of Variation	0.12	Skewness	0.228
Mean of logged Data	2.374	SD of logged Data	0.12

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.62	95% Adjusted-CLT UCL (Chen-1995)	11.56
		95% Modified-t UCL (Johnson-1978)	11.62

Nonparametric Distribution Free UCLs

95% CLT UCL	11.52	95% Jackknife UCL	11.62
95% Standard Bootstrap UCL	11.46	95% Bootstrap-t UCL	11.72
95% Hall's Bootstrap UCL	11.61	95% Percentile Bootstrap UCL	11.5
95% BCA Bootstrap UCL	11.48		
90% Chebyshev(Mean, Sd) UCL	12.11	95% Chebyshev(Mean, Sd) UCL	12.7
97.5% Chebyshev(Mean, Sd) UCL	13.52	99% Chebyshev(Mean, Sd) UCL	15.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.34	Mean	16.41
Maximum	52.7	Median	13.4
SD	13.75	Std. Error of Mean	4.583
Coefficient of Variation	0.838	Skewness	2.881
Mean of logged Data	2.628	SD of logged Data	0.529

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.94	95% Adjusted-CLT UCL (Chen-1995)	28.66
		95% Modified-t UCL (Johnson-1978)	25.67

Nonparametric Distribution Free UCLs

95% CLT UCL	23.95	95% Jackknife UCL	24.94
95% Standard Bootstrap UCL	23.55	95% Bootstrap-t UCL	54.18
95% Hall's Bootstrap UCL	60.59	95% Percentile Bootstrap UCL	25.07
95% BCA Bootstrap UCL	26.42		
90% Chebyshev(Mean, Sd) UCL	30.16	95% Chebyshev(Mean, Sd) UCL	36.39
97.5% Chebyshev(Mean, Sd) UCL	45.04	99% Chebyshev(Mean, Sd) UCL	62.02

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	36.39

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	32.8	Mean	41.17
Maximum	46.7	Median	42.3
SD	4.117	Std. Error of Mean	1.372
Coefficient of Variation	0.1	Skewness	-0.947
Mean of logged Data	3.713	SD of logged Data	0.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.72	95% Adjusted-CLT UCL (Chen-1995)	42.96
		95% Modified-t UCL (Johnson-1978)	43.65

Nonparametric Distribution Free UCLs

95% CLT UCL	43.42	95% Jackknife UCL	43.72
95% Standard Bootstrap UCL	43.28	95% Bootstrap-t UCL	43.27
95% Hall's Bootstrap UCL	43.11	95% Percentile Bootstrap UCL	43.11
95% BCA Bootstrap UCL	42.92		
90% Chebyshev(Mean, Sd) UCL	45.28	95% Chebyshev(Mean, Sd) UCL	47.15
97.5% Chebyshev(Mean, Sd) UCL	49.74	99% Chebyshev(Mean, Sd) UCL	54.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.59	Mean	5.677
Maximum	8.81	Median	4.3
SD	2.16	Std. Error of Mean	0.72
Coefficient of Variation	0.381	Skewness	0.563
Mean of logged Data	1.674	SD of logged Data	0.371

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.016	95% Adjusted-CLT UCL (Chen-1995)	7.006
		95% Modified-t UCL (Johnson-1978)	7.038

Nonparametric Distribution Free UCLs

95% CLT UCL	6.861	95% Jackknife UCL	7.016
95% Standard Bootstrap UCL	6.805	95% Bootstrap-t UCL	7.323
95% Hall's Bootstrap UCL	6.675	95% Percentile Bootstrap UCL	6.769
95% BCA Bootstrap UCL	6.924		
90% Chebyshev(Mean, Sd) UCL	7.837	95% Chebyshev(Mean, Sd) UCL	8.816
97.5% Chebyshev(Mean, Sd) UCL	10.17	99% Chebyshev(Mean, Sd) UCL	12.84

Suggested UCL to Use

95% Student's-t UCL	7.016	or 95% Modified-t UCL	7.038

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.095	Mean	13.9
Maximum	27.9	Median	11.6
SD	10.85	Std. Error of Mean	3.616
Coefficient of Variation	0.78	Skewness	0.101
Mean of logged Data	2.182	SD of logged Data	1.141

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.62	95% Adjusted-CLT UCL (Chen-1995)	19.98
		95% Modified-t UCL (Johnson-1978)	20.64

Nonparametric Distribution Free UCLs

95% CLT UCL	19.84	95% Jackknife UCL	20.62
95% Standard Bootstrap UCL	19.59	95% Bootstrap-t UCL	20.88
95% Hall's Bootstrap UCL	18.62	95% Percentile Bootstrap UCL	19.46
95% BCA Bootstrap UCL	19.68		
90% Chebyshev(Mean, Sd) UCL	24.74	95% Chebyshev(Mean, Sd) UCL	29.66
97.5% Chebyshev(Mean, Sd) UCL	36.48	99% Chebyshev(Mean, Sd) UCL	49.87

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.13	Mean	49.28
Maximum	104	Median	36.8
SD	40.57	Std. Error of Mean	13.52
Coefficient of Variation	0.823	Skewness	0.26
Mean of logged Data	3.427	SD of logged Data	1.149

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	74.43	95% Adjusted-CLT UCL (Chen-1995)	72.78
		95% Modified-t UCL (Johnson-1978)	74.62

Nonparametric Distribution Free UCLs

95% CLT UCL	71.52	95% Jackknife UCL	74.43
95% Standard Bootstrap UCL	70.57	95% Bootstrap-t UCL	78.12
95% Hall's Bootstrap UCL	66.56	95% Percentile Bootstrap UCL	70.9
95% BCA Bootstrap UCL	71.07		
90% Chebyshev(Mean, Sd) UCL	89.85	95% Chebyshev(Mean, Sd) UCL	108.2
97.5% Chebyshev(Mean, Sd) UCL	133.7	99% Chebyshev(Mean, Sd) UCL	183.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.45	Mean	348.5
Maximum	756	Median	264
SD	316.6	Std. Error of Mean	105.5
Coefficient of Variation	0.909	Skewness	0.286
Mean of logged Data	4.957	SD of logged Data	1.849

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	544.7	95% Adjusted-CLT UCL (Chen-1995)	532.8
		95% Modified-t UCL (Johnson-1978)	546.4

Nonparametric Distribution Free UCLs

95% CLT UCL	522	95% Jackknife UCL	544.7
95% Standard Bootstrap UCL	509.6	95% Bootstrap-t UCL	566.9
95% Hall's Bootstrap UCL	489.9	95% Percentile Bootstrap UCL	514.1
95% BCA Bootstrap UCL	535.9		
90% Chebyshev(Mean, Sd) UCL	665.1	95% Chebyshev(Mean, Sd) UCL	808.5
97.5% Chebyshev(Mean, Sd) UCL	1008	99% Chebyshev(Mean, Sd) UCL	1399

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	5.98	Mean	416.3
Maximum	945	Median	325
SD	377.3	Std. Error of Mean	125.8
Coefficient of Variation	0.906	Skewness	0.314
Mean of logged Data	5.067	SD of logged Data	2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	650.2	95% Adjusted-CLT UCL (Chen-1995)	637.3
		95% Modified-t UCL (Johnson-1978)	652.4

Nonparametric Distribution Free UCLs

95% CLT UCL	623.2	95% Jackknife UCL	650.2
95% Standard Bootstrap UCL	613.4	95% Bootstrap-t UCL	678.3
95% Hall's Bootstrap UCL	589.3	95% Percentile Bootstrap UCL	616.9
95% BCA Bootstrap UCL	617.7		
90% Chebyshev(Mean, Sd) UCL	793.6	95% Chebyshev(Mean, Sd) UCL	964.6
97.5% Chebyshev(Mean, Sd) UCL	1202	99% Chebyshev(Mean, Sd) UCL	1668

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.9	Mean	548
Maximum	1230	Median	412
SD	495.3	Std. Error of Mean	165.1
Coefficient of Variation	0.904	Skewness	0.355
Mean of logged Data	5.434	SD of logged Data	1.851

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	855.1	95% Adjusted-CLT UCL (Chen-1995)	840.5
		95% Modified-t UCL (Johnson-1978)	858.3

Nonparametric Distribution Free UCLs

95% CLT UCL	819.6	95% Jackknife UCL	855.1
95% Standard Bootstrap UCL	805.6	95% Bootstrap-t UCL	872.3
95% Hall's Bootstrap UCL	771.5	95% Percentile Bootstrap UCL	805.1
95% BCA Bootstrap UCL	818.8		
90% Chebyshev(Mean, Sd) UCL	1043	95% Chebyshev(Mean, Sd) UCL	1268
97.5% Chebyshev(Mean, Sd) UCL	1579	99% Chebyshev(Mean, Sd) UCL	2191

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13	Mean	288.3
Maximum	607	Median	216
SD	251.3	Std. Error of Mean	83.77
Coefficient of Variation	0.872	Skewness	0.341
Mean of logged Data	4.981	SD of logged Data	1.54

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	444.1	95% Adjusted-CLT UCL (Chen-1995)	436.3
		95% Modified-t UCL (Johnson-1978)	445.7

Nonparametric Distribution Free UCLs

95% CLT UCL	426.1	95% Jackknife UCL	444.1
95% Standard Bootstrap UCL	418	95% Bootstrap-t UCL	466.3
95% Hall's Bootstrap UCL	398.4	95% Percentile Bootstrap UCL	416.1
95% BCA Bootstrap UCL	422.9		
90% Chebyshev(Mean, Sd) UCL	539.7	95% Chebyshev(Mean, Sd) UCL	653.5
97.5% Chebyshev(Mean, Sd) UCL	811.5	99% Chebyshev(Mean, Sd) UCL	1122

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.45	Mean	201.8
Maximum	419	Median	145
SD	177.5	Std. Error of Mean	59.17
Coefficient of Variation	0.88	Skewness	0.31
Mean of logged Data	4.591	SD of logged Data	1.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	311.8	95% Adjusted-CLT UCL (Chen-1995)	305.6

		95% Modified-t UCL (Johnson-1978)	312.8

Nonparametric Distribution Free UCLs

95% CLT UCL	299.1	95% Jackknife UCL	311.8
95% Standard Bootstrap UCL	294.4	95% Bootstrap-t UCL	320.6
95% Hall's Bootstrap UCL	279.1	95% Percentile Bootstrap UCL	290.8
95% BCA Bootstrap UCL	300.4		
90% Chebyshev(Mean, Sd) UCL	379.3	95% Chebyshev(Mean, Sd) UCL	459.7
97.5% Chebyshev(Mean, Sd) UCL	571.3	99% Chebyshev(Mean, Sd) UCL	790.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.14	Mean	435.4
Maximum	937	Median	318
SD	399.8	Std. Error of Mean	133.3
Coefficient of Variation	0.918	Skewness	0.308
Mean of logged Data	5.124	SD of logged Data	1.942

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	683.3	95% Adjusted-CLT UCL (Chen-1995)	669.3
		95% Modified-t UCL (Johnson-1978)	685.5

Nonparametric Distribution Free UCLs

95% CLT UCL	654.6	95% Jackknife UCL	683.3
95% Standard Bootstrap UCL	636.1	95% Bootstrap-t UCL	717.8
95% Hall's Bootstrap UCL	610.1	95% Percentile Bootstrap UCL	641.3
95% BCA Bootstrap UCL	653.6		
90% Chebyshev(Mean, Sd) UCL	835.2	95% Chebyshev(Mean, Sd) UCL	1016
97.5% Chebyshev(Mean, Sd) UCL	1268	99% Chebyshev(Mean, Sd) UCL	1761

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	13	Mean	80.31
Maximum	167	Median	56.8
SD	67.55	Std. Error of Mean	22.52
Coefficient of Variation	0.841	Skewness	0.431
Mean of logged Data	3.934	SD of logged Data	1.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	122.2	95% Adjusted-CLT UCL (Chen-1995)	120.8
		95% Modified-t UCL (Johnson-1978)	122.7

Nonparametric Distribution Free UCLs

95% CLT UCL	117.3	95% Jackknife UCL	122.2
95% Standard Bootstrap UCL	115.8	95% Bootstrap-t UCL	128
95% Hall's Bootstrap UCL	108.9	95% Percentile Bootstrap UCL	117
95% BCA Bootstrap UCL	117		
90% Chebyshev(Mean, Sd) UCL	147.9	95% Chebyshev(Mean, Sd) UCL	178.5
97.5% Chebyshev(Mean, Sd) UCL	220.9	99% Chebyshev(Mean, Sd) UCL	304.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.98	Mean	587.6
Maximum	1330	Median	432
SD	549.2	Std. Error of Mean	183.1
Coefficient of Variation	0.935	Skewness	0.339
Mean of logged Data	5.349	SD of logged Data	2.037

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	928	95% Adjusted-CLT UCL (Chen-1995)	910.8
		95% Modified-t UCL (Johnson-1978)	931.5

Nonparametric Distribution Free UCLs

95% CLT UCL	888.7	95% Jackknife UCL	928

95% Standard Bootstrap UCL	868.5	95% Bootstrap-t UCL	980.8
95% Hall's Bootstrap UCL	833.5	95% Percentile Bootstrap UCL	868.1
95% BCA Bootstrap UCL	897.8		
90% Chebyshev(Mean, Sd) UCL	1137	95% Chebyshev(Mean, Sd) UCL	1386
97.5% Chebyshev(Mean, Sd) UCL	1731	99% Chebyshev(Mean, Sd) UCL	2409

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	4.22	Mean	7.831
Maximum	13.1	Median	5.3
SD	3.614	Std. Error of Mean	1.205
Coefficient of Variation	0.462	Skewness	0.626
Mean of logged Data	1.966	SD of logged Data	0.451

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.07	95% Adjusted-CLT UCL (Chen-1995)	10.08
		95% Modified-t UCL (Johnson-1978)	10.11

Nonparametric Distribution Free UCLs

95% CLT UCL	9.813	95% Jackknife UCL	10.07
95% Standard Bootstrap UCL	9.683	95% Bootstrap-t UCL	10.79
95% Hall's Bootstrap UCL	9.496	95% Percentile Bootstrap UCL	9.739
95% BCA Bootstrap UCL	9.857		
90% Chebyshev(Mean, Sd) UCL	11.45	95% Chebyshev(Mean, Sd) UCL	13.08
97.5% Chebyshev(Mean, Sd) UCL	15.35	99% Chebyshev(Mean, Sd) UCL	19.82

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13	Mean	312.3
Maximum	710	Median	247

SD	266.8	Std. Error of Mean	88.94
Coefficient of Variation	0.855	Skewness	0.31
Mean of logged Data	5.049	SD of logged Data	1.576

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	477.6	95% Adjusted-CLT UCL (Chen-1995)	468.4
		95% Modified-t UCL (Johnson-1978)	479.2

Nonparametric Distribution Free UCLs

95% CLT UCL	458.6	95% Jackknife UCL	477.6
95% Standard Bootstrap UCL	447.2	95% Bootstrap-t UCL	498.5
95% Hall's Bootstrap UCL	457.2	95% Percentile Bootstrap UCL	457.9
95% BCA Bootstrap UCL	457.9		
90% Chebyshev(Mean, Sd) UCL	579.1	95% Chebyshev(Mean, Sd) UCL	699.9
97.5% Chebyshev(Mean, Sd) UCL	867.7	99% Chebyshev(Mean, Sd) UCL	1197

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.895	Mean	13.9
Maximum	23.8	Median	18.25
SD	8.198	Std. Error of Mean	2.733
Coefficient of Variation	0.59	Skewness	-0.318
Mean of logged Data	2.4	SD of logged Data	0.795

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.98	95% Adjusted-CLT UCL (Chen-1995)	18.09
		95% Modified-t UCL (Johnson-1978)	18.94

Nonparametric Distribution Free UCLs

95% CLT UCL	18.4	95% Jackknife UCL	18.98
95% Standard Bootstrap UCL	18.16	95% Bootstrap-t UCL	18.79
95% Hall's Bootstrap UCL	17.46	95% Percentile Bootstrap UCL	18.03
95% BCA Bootstrap UCL	17.96		
90% Chebyshev(Mean, Sd) UCL	22.1	95% Chebyshev(Mean, Sd) UCL	25.81

97.5% Chebyshev(Mean, Sd) UCL	30.97	99% Chebyshev(Mean, Sd) UCL	41.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13	Mean	231
Maximum	499	Median	171
SD	203	Std. Error of Mean	67.68
Coefficient of Variation	0.879	Skewness	0.182
Mean of logged Data	4.706	SD of logged Data	1.576

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	356.8	95% Adjusted-CLT UCL (Chen-1995)	346.7
		95% Modified-t UCL (Johnson-1978)	357.5

Nonparametric Distribution Free UCLs

95% CLT UCL	342.3	95% Jackknife UCL	356.8
95% Standard Bootstrap UCL	333.8	95% Bootstrap-t UCL	366.2
95% Hall's Bootstrap UCL	319.4	95% Percentile Bootstrap UCL	336.9
95% BCA Bootstrap UCL	343.4		
90% Chebyshev(Mean, Sd) UCL	434	95% Chebyshev(Mean, Sd) UCL	526
97.5% Chebyshev(Mean, Sd) UCL	653.6	99% Chebyshev(Mean, Sd) UCL	904.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.02	Mean	584.7
Maximum	1290	Median	437
SD	540.2	Std. Error of Mean	180.1

Coefficient of Variation	0.924	Skewness	0.292
Mean of logged Data	5.351	SD of logged Data	2.035

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	919.6	95% Adjusted-CLT UCL (Chen-1995)	899.6
		95% Modified-t UCL (Johnson-1978)	922.5

Nonparametric Distribution Free UCLs

95% CLT UCL	880.9	95% Jackknife UCL	919.6
95% Standard Bootstrap UCL	870.1	95% Bootstrap-t UCL	936.2
95% Hall's Bootstrap UCL	826.8	95% Percentile Bootstrap UCL	862.8
95% BCA Bootstrap UCL	868.1		
90% Chebyshev(Mean, Sd) UCL	1125	95% Chebyshev(Mean, Sd) UCL	1370
97.5% Chebyshev(Mean, Sd) UCL	1709	99% Chebyshev(Mean, Sd) UCL	2376

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:20:05 PM
From File	Thompson H_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	9.65	Mean	11.63
Maximum	13	Median	11.5
SD	1.247	Std. Error of Mean	0.416
Coefficient of Variation	0.107	Skewness	-0.53
Mean of logged Data	2.448	SD of logged Data	0.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.4	95% Adjusted-CLT UCL (Chen-1995)	12.24
		95% Modified-t UCL (Johnson-1978)	12.39

Nonparametric Distribution Free UCLs

95% CLT UCL	12.31	95% Jackknife UCL	12.4
95% Standard Bootstrap UCL	12.28	95% Bootstrap-t UCL	12.36
95% Hall's Bootstrap UCL	12.21	95% Percentile Bootstrap UCL	12.24
95% BCA Bootstrap UCL	12.2		
90% Chebyshev(Mean, Sd) UCL	12.88	95% Chebyshev(Mean, Sd) UCL	13.44
97.5% Chebyshev(Mean, Sd) UCL	14.23	99% Chebyshev(Mean, Sd) UCL	15.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.3	Mean	12.88
Maximum	16	Median	12.9
SD	1.649	Std. Error of Mean	0.55
Coefficient of Variation	0.128	Skewness	0.547

Mean of logged Data	2.548	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.9	95% Adjusted-CLT UCL (Chen-1995)	13.89
		95% Modified-t UCL (Johnson-1978)	13.92

Nonparametric Distribution Free UCLs

95% CLT UCL	13.78	95% Jackknife UCL	13.9
95% Standard Bootstrap UCL	13.73	95% Bootstrap-t UCL	14.1
95% Hall's Bootstrap UCL	14.5	95% Percentile Bootstrap UCL	13.74
95% BCA Bootstrap UCL	13.8		
90% Chebyshev(Mean, Sd) UCL	14.53	95% Chebyshev(Mean, Sd) UCL	15.27
97.5% Chebyshev(Mean, Sd) UCL	16.31	99% Chebyshev(Mean, Sd) UCL	18.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	38.9	Mean	42.31
Maximum	47.6	Median	41.2
SD	2.87	Std. Error of Mean	0.957
Coefficient of Variation	0.0678	Skewness	0.712
Mean of logged Data	3.743	SD of logged Data	0.0668

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.09	95% Adjusted-CLT UCL (Chen-1995)	44.13
		95% Modified-t UCL (Johnson-1978)	44.13

Nonparametric Distribution Free UCLs

95% CLT UCL	43.88	95% Jackknife UCL	44.09
95% Standard Bootstrap UCL	43.75	95% Bootstrap-t UCL	44.46
95% Hall's Bootstrap UCL	44.01	95% Percentile Bootstrap UCL	43.92
95% BCA Bootstrap UCL	43.98		
90% Chebyshev(Mean, Sd) UCL	45.18	95% Chebyshev(Mean, Sd) UCL	46.48
97.5% Chebyshev(Mean, Sd) UCL	48.29	99% Chebyshev(Mean, Sd) UCL	51.83

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.955	Mean	6.819
Maximum	20.9	Median	5.13
SD	6.726	Std. Error of Mean	2.242
Coefficient of Variation	0.986	Skewness	1.273
Mean of logged Data	1.39	SD of logged Data	1.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.99	95% Adjusted-CLT UCL (Chen-1995)	11.52
		95% Modified-t UCL (Johnson-1978)	11.15

Nonparametric Distribution Free UCLs

95% CLT UCL	10.51	95% Jackknife UCL	10.99
95% Standard Bootstrap UCL	10.27	95% Bootstrap-t UCL	13.99
95% Hall's Bootstrap UCL	14.57	95% Percentile Bootstrap UCL	10.62
95% BCA Bootstrap UCL	10.93		
90% Chebyshev(Mean, Sd) UCL	13.55	95% Chebyshev(Mean, Sd) UCL	16.59
97.5% Chebyshev(Mean, Sd) UCL	20.82	99% Chebyshev(Mean, Sd) UCL	29.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.51	Mean	28.83
Maximum	106	Median	22.2
SD	34.19	Std. Error of Mean	11.4
Coefficient of Variation	1.186	Skewness	1.613
Mean of logged Data	2.134	SD of logged Data	2.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.02	95% Adjusted-CLT UCL (Chen-1995)	54.12
		95% Modified-t UCL (Johnson-1978)	51.04

Nonparametric Distribution Free UCLs

95% CLT UCL	47.58	95% Jackknife UCL	50.02
95% Standard Bootstrap UCL	46.57	95% Bootstrap-t UCL	65.41
95% Hall's Bootstrap UCL	129.6	95% Percentile Bootstrap UCL	48.4
95% BCA Bootstrap UCL	53.05		
90% Chebyshev(Mean, Sd) UCL	63.02	95% Chebyshev(Mean, Sd) UCL	78.51
97.5% Chebyshev(Mean, Sd) UCL	100	99% Chebyshev(Mean, Sd) UCL	142.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.95	Mean	77.19
Maximum	251	Median	71.2
SD	81.18	Std. Error of Mean	27.06
Coefficient of Variation	1.052	Skewness	1.251
Mean of logged Data	3.298	SD of logged Data	1.99

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	127.5	95% Adjusted-CLT UCL (Chen-1995)	133.8
		95% Modified-t UCL (Johnson-1978)	129.4

Nonparametric Distribution Free UCLs

95% CLT UCL	121.7	95% Jackknife UCL	127.5
95% Standard Bootstrap UCL	119.8	95% Bootstrap-t UCL	153.8
95% Hall's Bootstrap UCL	208.5	95% Percentile Bootstrap UCL	120.5
95% BCA Bootstrap UCL	130.7		
90% Chebyshev(Mean, Sd) UCL	158.4	95% Chebyshev(Mean, Sd) UCL	195.1
97.5% Chebyshev(Mean, Sd) UCL	246.2	99% Chebyshev(Mean, Sd) UCL	346.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.42	Mean	501.9
Maximum	1080	Median	548
SD	432.6	Std. Error of Mean	144.2
Coefficient of Variation	0.862	Skewness	0.0508
Mean of logged Data	4.983	SD of logged Data	2.403

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	770.1	95% Adjusted-CLT UCL (Chen-1995)	741.7
		95% Modified-t UCL (Johnson-1978)	770.5

Nonparametric Distribution Free UCLs

95% CLT UCL	739.1	95% Jackknife UCL	770.1
95% Standard Bootstrap UCL	719	95% Bootstrap-t UCL	775.9
95% Hall's Bootstrap UCL	718.3	95% Percentile Bootstrap UCL	730.6
95% BCA Bootstrap UCL	715.2		
90% Chebyshev(Mean, Sd) UCL	934.5	95% Chebyshev(Mean, Sd) UCL	1131
97.5% Chebyshev(Mean, Sd) UCL	1403	99% Chebyshev(Mean, Sd) UCL	1937

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.84	Mean	680.5
Maximum	2100	Median	629
SD	688.7	Std. Error of Mean	229.6
Coefficient of Variation	1.012	Skewness	1.041
Mean of logged Data	5.189	SD of logged Data	2.474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1107	95% Adjusted-CLT UCL (Chen-1995)	1143
		95% Modified-t UCL (Johnson-1978)	1121

Nonparametric Distribution Free UCLs

95% CLT UCL	1058	95% Jackknife UCL	1107
95% Standard Bootstrap UCL	1027	95% Bootstrap-t UCL	1276
95% Hall's Bootstrap UCL	1338	95% Percentile Bootstrap UCL	1037
95% BCA Bootstrap UCL	1130		
90% Chebyshev(Mean, Sd) UCL	1369	95% Chebyshev(Mean, Sd) UCL	1681
97.5% Chebyshev(Mean, Sd) UCL	2114	99% Chebyshev(Mean, Sd) UCL	2965

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.21	Mean	856.3
Maximum	2460	Median	815
SD	834.3	Std. Error of Mean	278.1
Coefficient of Variation	0.974	Skewness	0.791
Mean of logged Data	5.472	SD of logged Data	2.407

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1373	95% Adjusted-CLT UCL (Chen-1995)	1392
		95% Modified-t UCL (Johnson-1978)	1386

Nonparametric Distribution Free UCLs

95% CLT UCL	1314	95% Jackknife UCL	1373
95% Standard Bootstrap UCL	1306	95% Bootstrap-t UCL	1529
95% Hall's Bootstrap UCL	1475	95% Percentile Bootstrap UCL	1279
95% BCA Bootstrap UCL	1353		
90% Chebyshev(Mean, Sd) UCL	1691	95% Chebyshev(Mean, Sd) UCL	2068
97.5% Chebyshev(Mean, Sd) UCL	2593	99% Chebyshev(Mean, Sd) UCL	3623

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.72	Mean	432.4
Maximum	1180	Median	433
SD	411.1	Std. Error of Mean	137
Coefficient of Variation	0.951	Skewness	0.612
Mean of logged Data	4.753	SD of logged Data	2.47

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	687.2	95% Adjusted-CLT UCL (Chen-1995)	687.7
		95% Modified-t UCL (Johnson-1978)	691.9

Nonparametric Distribution Free UCLs

95% CLT UCL	657.8	95% Jackknife UCL	687.2
95% Standard Bootstrap UCL	640.9	95% Bootstrap-t UCL	733.2
95% Hall's Bootstrap UCL	711.7	95% Percentile Bootstrap UCL	656.2
95% BCA Bootstrap UCL	651.6		
90% Chebyshev(Mean, Sd) UCL	843.5	95% Chebyshev(Mean, Sd) UCL	1030
97.5% Chebyshev(Mean, Sd) UCL	1288	99% Chebyshev(Mean, Sd) UCL	1796

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.09	Mean	349.9
Maximum	1050	Median	320
SD	348.2	Std. Error of Mean	116.1
Coefficient of Variation	0.995	Skewness	0.942
Mean of logged Data	4.536	SD of logged Data	2.463

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	565.7	95% Adjusted-CLT UCL (Chen-1995)	579.8

		95% Modified-t UCL (Johnson-1978)	571.8

Nonparametric Distribution Free UCLs

95% CLT UCL	540.8	95% Jackknife UCL	565.7
95% Standard Bootstrap UCL	534.1	95% Bootstrap-t UCL	644.4
95% Hall's Bootstrap UCL	692	95% Percentile Bootstrap UCL	542.4
95% BCA Bootstrap UCL	562.1		
90% Chebyshev(Mean, Sd) UCL	698.1	95% Chebyshev(Mean, Sd) UCL	855.8
97.5% Chebyshev(Mean, Sd) UCL	1075	99% Chebyshev(Mean, Sd) UCL	1505

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.52	Mean	722.3
Maximum	2190	Median	672
SD	730.7	Std. Error of Mean	243.6
Coefficient of Variation	1.012	Skewness	0.97
Mean of logged Data	5.249	SD of logged Data	2.464

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1175	95% Adjusted-CLT UCL (Chen-1995)	1207
		95% Modified-t UCL (Johnson-1978)	1188

Nonparametric Distribution Free UCLs

95% CLT UCL	1123	95% Jackknife UCL	1175
95% Standard Bootstrap UCL	1101	95% Bootstrap-t UCL	1323
95% Hall's Bootstrap UCL	1474	95% Percentile Bootstrap UCL	1139
95% BCA Bootstrap UCL	1179		
90% Chebyshev(Mean, Sd) UCL	1453	95% Chebyshev(Mean, Sd) UCL	1784
97.5% Chebyshev(Mean, Sd) UCL	2243	99% Chebyshev(Mean, Sd) UCL	3146

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.185	Mean	102.9
Maximum	301	Median	101
SD	99.45	Std. Error of Mean	33.15
Coefficient of Variation	0.966	Skewness	0.897
Mean of logged Data	3.671	SD of logged Data	1.914

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	164.6	95% Adjusted-CLT UCL (Chen-1995)	168.1
		95% Modified-t UCL (Johnson-1978)	166.2

Nonparametric Distribution Free UCLs

95% CLT UCL	157.5	95% Jackknife UCL	164.6
95% Standard Bootstrap UCL	154.4	95% Bootstrap-t UCL	180.7
95% Hall's Bootstrap UCL	198.9	95% Percentile Bootstrap UCL	158.2
95% BCA Bootstrap UCL	162.1		
90% Chebyshev(Mean, Sd) UCL	202.4	95% Chebyshev(Mean, Sd) UCL	247.4
97.5% Chebyshev(Mean, Sd) UCL	310	99% Chebyshev(Mean, Sd) UCL	432.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	5.38	Mean	886.7
Maximum	2600	Median	882
SD	865.3	Std. Error of Mean	288.4
Coefficient of Variation	0.976	Skewness	0.85
Mean of logged Data	5.469	SD of logged Data	2.475

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1423	95% Adjusted-CLT UCL (Chen-1995)	1448
		95% Modified-t UCL (Johnson-1978)	1437

Nonparametric Distribution Free UCLs

95% CLT UCL	1361	95% Jackknife UCL	1423

95% Standard Bootstrap UCL	1335	95% Bootstrap-t UCL	1560
95% Hall's Bootstrap UCL	1600	95% Percentile Bootstrap UCL	1352
95% BCA Bootstrap UCL	1400		
90% Chebyshev(Mean, Sd) UCL	1752	95% Chebyshev(Mean, Sd) UCL	2144
97.5% Chebyshev(Mean, Sd) UCL	2688	99% Chebyshev(Mean, Sd) UCL	3757

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.275	Mean	9.686
Maximum	34.4	Median	6.59
SD	10.67	Std. Error of Mean	3.556
Coefficient of Variation	1.101	Skewness	1.766
Mean of logged Data	1.684	SD of logged Data	1.222

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.3	95% Adjusted-CLT UCL (Chen-1995)	17.77
		95% Modified-t UCL (Johnson-1978)	16.65

Nonparametric Distribution Free UCLs

95% CLT UCL	15.54	95% Jackknife UCL	16.3
95% Standard Bootstrap UCL	15.21	95% Bootstrap-t UCL	21.42
95% Hall's Bootstrap UCL	39.06	95% Percentile Bootstrap UCL	15.89
95% BCA Bootstrap UCL	17.68		
90% Chebyshev(Mean, Sd) UCL	20.35	95% Chebyshev(Mean, Sd) UCL	25.19
97.5% Chebyshev(Mean, Sd) UCL	31.89	99% Chebyshev(Mean, Sd) UCL	45.07

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.4	Mean	535.3
Maximum	1500	Median	526

SD	508.9	Std. Error of Mean	169.6
Coefficient of Variation	0.951	Skewness	0.701
Mean of logged Data	4.977	SD of logged Data	2.463

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	850.8	95% Adjusted-CLT UCL (Chen-1995)	856.7
		95% Modified-t UCL (Johnson-1978)	857.4

Nonparametric Distribution Free UCLs

95% CLT UCL	814.4	95% Jackknife UCL	850.8
95% Standard Bootstrap UCL	793.5	95% Bootstrap-t UCL	908.2
95% Hall's Bootstrap UCL	912.4	95% Percentile Bootstrap UCL	796.5
95% BCA Bootstrap UCL	822.2		
90% Chebyshev(Mean, Sd) UCL	1044	95% Chebyshev(Mean, Sd) UCL	1275
97.5% Chebyshev(Mean, Sd) UCL	1595	99% Chebyshev(Mean, Sd) UCL	2223

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.955	Mean	16.77
Maximum	43.1	Median	13.9
SD	15.63	Std. Error of Mean	5.209
Coefficient of Variation	0.932	Skewness	0.56
Mean of logged Data	2.041	SD of logged Data	1.618

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.46	95% Adjusted-CLT UCL (Chen-1995)	26.38
		95% Modified-t UCL (Johnson-1978)	26.62

Nonparametric Distribution Free UCLs

95% CLT UCL	25.34	95% Jackknife UCL	26.46
95% Standard Bootstrap UCL	24.77	95% Bootstrap-t UCL	28.34
95% Hall's Bootstrap UCL	26.06	95% Percentile Bootstrap UCL	25.18
95% BCA Bootstrap UCL	26.36		
90% Chebyshev(Mean, Sd) UCL	32.4	95% Chebyshev(Mean, Sd) UCL	39.48

97.5% Chebyshev(Mean, Sd) UCL	49.3	99% Chebyshev(Mean, Sd) UCL	68.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.31	Mean	364.5
Maximum	1120	Median	346
SD	371.7	Std. Error of Mean	123.9
Coefficient of Variation	1.02	Skewness	1.012
Mean of logged Data	4.553	SD of logged Data	2.485

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	594.9	95% Adjusted-CLT UCL (Chen-1995)	612.9
		95% Modified-t UCL (Johnson-1978)	601.8

Nonparametric Distribution Free UCLs

95% CLT UCL	568.3	95% Jackknife UCL	594.9
95% Standard Bootstrap UCL	560.1	95% Bootstrap-t UCL	678.8
95% Hall's Bootstrap UCL	726.8	95% Percentile Bootstrap UCL	567.3
95% BCA Bootstrap UCL	600.9		
90% Chebyshev(Mean, Sd) UCL	736.2	95% Chebyshev(Mean, Sd) UCL	904.5
97.5% Chebyshev(Mean, Sd) UCL	1138	99% Chebyshev(Mean, Sd) UCL	1597

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	5.17	Mean	902.9
Maximum	2720	Median	870
SD	904.4	Std. Error of Mean	301.5
Coefficient of Variation	1.002	Skewness	0.949
Mean of logged Data	5.46	SD of logged Data	2.495

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1463	95% Adjusted-CLT UCL (Chen-1995)	1501
		95% Modified-t UCL (Johnson-1978)	1479

Nonparametric Distribution Free UCLs

95% CLT UCL	1399	95% Jackknife UCL	1463
95% Standard Bootstrap UCL	1368	95% Bootstrap-t UCL	1658
95% Hall's Bootstrap UCL	1688	95% Percentile Bootstrap UCL	1373
95% BCA Bootstrap UCL	1465		
90% Chebyshev(Mean, Sd) UCL	1807	95% Chebyshev(Mean, Sd) UCL	2217
97.5% Chebyshev(Mean, Sd) UCL	2786	99% Chebyshev(Mean, Sd) UCL	3902

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:29:44 PM
From File	Thompson I_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.65	Mean	13.99
Maximum	24.1	Median	12.5
SD	3.892	Std. Error of Mean	1.297
Coefficient of Variation	0.278	Skewness	2.723
Mean of logged Data	2.613	SD of logged Data	0.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.41	95% Adjusted-CLT UCL (Chen-1995)	17.39
		95% Modified-t UCL (Johnson-1978)	16.6

Nonparametric Distribution Free UCLs

95% CLT UCL	16.13	95% Jackknife UCL	16.41
95% Standard Bootstrap UCL	15.96	95% Bootstrap-t UCL	28.11
95% Hall's Bootstrap UCL	27.11	95% Percentile Bootstrap UCL	16.39
95% BCA Bootstrap UCL	17.77		
90% Chebyshev(Mean, Sd) UCL	17.89	95% Chebyshev(Mean, Sd) UCL	19.65
97.5% Chebyshev(Mean, Sd) UCL	22.1	99% Chebyshev(Mean, Sd) UCL	26.9

Suggested UCL to Use

95% Student's-t UCL	16.41	or 95% Modified-t UCL	16.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	15.6	Mean	23.6
Maximum	74.9	Median	16.7
SD	19.34	Std. Error of Mean	6.448
Coefficient of Variation	0.82	Skewness	2.939
Mean of logged Data	3.002	SD of logged Data	0.504

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.59	95% Adjusted-CLT UCL (Chen-1995)	40.96
		95% Modified-t UCL (Johnson-1978)	36.64

Nonparametric Distribution Free UCLs

95% CLT UCL	34.21	95% Jackknife UCL	35.59
95% Standard Bootstrap UCL	33.83	95% Bootstrap-t UCL	226.2
95% Hall's Bootstrap UCL	105.3	95% Percentile Bootstrap UCL	36.11
95% BCA Bootstrap UCL	42.59		
90% Chebyshev(Mean, Sd) UCL	42.94	95% Chebyshev(Mean, Sd) UCL	51.71
97.5% Chebyshev(Mean, Sd) UCL	63.87	99% Chebyshev(Mean, Sd) UCL	87.76

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	51.71

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.6	Mean	61.06
Maximum	84.4	Median	50.3
SD	16.4	Std. Error of Mean	5.467
Coefficient of Variation	0.269	Skewness	0.429
Mean of logged Data	4.08	SD of logged Data	0.264

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.22	95% Adjusted-CLT UCL (Chen-1995)	70.88
		95% Modified-t UCL (Johnson-1978)	71.35

Nonparametric Distribution Free UCLs

95% CLT UCL	70.05	95% Jackknife UCL	71.22
95% Standard Bootstrap UCL	69.54	95% Bootstrap-t UCL	72.04
95% Hall's Bootstrap UCL	67.75	95% Percentile Bootstrap UCL	69.38
95% BCA Bootstrap UCL	70.88		
90% Chebyshev(Mean, Sd) UCL	77.46	95% Chebyshev(Mean, Sd) UCL	84.89
97.5% Chebyshev(Mean, Sd) UCL	95.2	99% Chebyshev(Mean, Sd) UCL	115.5

Suggested UCL to Use

95% Student's-t UCL	71.22	or 95% Modified-t UCL	71.35

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.955	Mean	19.78
Maximum	39.5	Median	23
SD	16.03	Std. Error of Mean	5.344
Coefficient of Variation	0.811	Skewness	-0.165
Mean of logged Data	2.201	SD of logged Data	1.702

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.72	95% Adjusted-CLT UCL (Chen-1995)	28.26
		95% Modified-t UCL (Johnson-1978)	29.67

Nonparametric Distribution Free UCLs

95% CLT UCL	28.57	95% Jackknife UCL	29.72
95% Standard Bootstrap UCL	28.02	95% Bootstrap-t UCL	29.58
95% Hall's Bootstrap UCL	26.82	95% Percentile Bootstrap UCL	28
95% BCA Bootstrap UCL	27.87		
90% Chebyshev(Mean, Sd) UCL	35.81	95% Chebyshev(Mean, Sd) UCL	43.07
97.5% Chebyshev(Mean, Sd) UCL	53.15	99% Chebyshev(Mean, Sd) UCL	72.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.517	Mean	69.5
Maximum	160	Median	69.6
SD	60.83	Std. Error of Mean	20.28
Coefficient of Variation	0.875	Skewness	0.125
Mean of logged Data	2.958	SD of logged Data	2.453

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	107.2	95% Adjusted-CLT UCL (Chen-1995)	103.8
		95% Modified-t UCL (Johnson-1978)	107.4

Nonparametric Distribution Free UCLs

95% CLT UCL	102.9	95% Jackknife UCL	107.2
95% Standard Bootstrap UCL	101.1	95% Bootstrap-t UCL	105.6
95% Hall's Bootstrap UCL	101.2	95% Percentile Bootstrap UCL	101.6
95% BCA Bootstrap UCL	102.4		
90% Chebyshev(Mean, Sd) UCL	130.3	95% Chebyshev(Mean, Sd) UCL	157.9
97.5% Chebyshev(Mean, Sd) UCL	196.1	99% Chebyshev(Mean, Sd) UCL	271.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.39	Mean	252.6
Maximum	673	Median	242
SD	234.9	Std. Error of Mean	78.29
Coefficient of Variation	0.93	Skewness	0.556
Mean of logged Data	4.146	SD of logged Data	2.585

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	398.2	95% Adjusted-CLT UCL (Chen-1995)	396.9
		95% Modified-t UCL (Johnson-1978)	400.6

Nonparametric Distribution Free UCLs

95% CLT UCL	381.4	95% Jackknife UCL	398.2
95% Standard Bootstrap UCL	373	95% Bootstrap-t UCL	425.5
95% Hall's Bootstrap UCL	448.2	95% Percentile Bootstrap UCL	377.4
95% BCA Bootstrap UCL	384.8		
90% Chebyshev(Mean, Sd) UCL	487.5	95% Chebyshev(Mean, Sd) UCL	593.9
97.5% Chebyshev(Mean, Sd) UCL	741.5	99% Chebyshev(Mean, Sd) UCL	1032

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.7	Mean	1596
Maximum	3630	Median	1610
SD	1378	Std. Error of Mean	459.2
Coefficient of Variation	0.863	Skewness	0.142
Mean of logged Data	6.147	SD of logged Data	2.383

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2450	95% Adjusted-CLT UCL (Chen-1995)	2374
		95% Modified-t UCL (Johnson-1978)	2453

Nonparametric Distribution Free UCLs

95% CLT UCL	2351	95% Jackknife UCL	2450
95% Standard Bootstrap UCL	2284	95% Bootstrap-t UCL	2480
95% Hall's Bootstrap UCL	2431	95% Percentile Bootstrap UCL	2337
95% BCA Bootstrap UCL	2325		
90% Chebyshev(Mean, Sd) UCL	2973	95% Chebyshev(Mean, Sd) UCL	3598
97.5% Chebyshev(Mean, Sd) UCL	4464	99% Chebyshev(Mean, Sd) UCL	6165

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	18.6	Mean	2077
Maximum	4730	Median	2160
SD	1779	Std. Error of Mean	593
Coefficient of Variation	0.856	Skewness	0.0992
Mean of logged Data	6.425	SD of logged Data	2.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3180	95% Adjusted-CLT UCL (Chen-1995)	3073
		95% Modified-t UCL (Johnson-1978)	3183

Nonparametric Distribution Free UCLs

95% CLT UCL	3053	95% Jackknife UCL	3180
95% Standard Bootstrap UCL	2989	95% Bootstrap-t UCL	3235
95% Hall's Bootstrap UCL	3053	95% Percentile Bootstrap UCL	2981
95% BCA Bootstrap UCL	3006		
90% Chebyshev(Mean, Sd) UCL	3856	95% Chebyshev(Mean, Sd) UCL	4662
97.5% Chebyshev(Mean, Sd) UCL	5780	99% Chebyshev(Mean, Sd) UCL	7977

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	22.6	Mean	2457
Maximum	5670	Median	2530
SD	2106	Std. Error of Mean	702
Coefficient of Variation	0.857	Skewness	0.113
Mean of logged Data	6.594	SD of logged Data	2.361

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3762	95% Adjusted-CLT UCL (Chen-1995)	3640
		95% Modified-t UCL (Johnson-1978)	3766

Nonparametric Distribution Free UCLs

95% CLT UCL	3611	95% Jackknife UCL	3762
95% Standard Bootstrap UCL	3565	95% Bootstrap-t UCL	3785
95% Hall's Bootstrap UCL	3679	95% Percentile Bootstrap UCL	3550
95% BCA Bootstrap UCL	3559		
90% Chebyshev(Mean, Sd) UCL	4563	95% Chebyshev(Mean, Sd) UCL	5516
97.5% Chebyshev(Mean, Sd) UCL	6840	99% Chebyshev(Mean, Sd) UCL	9441

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12	Mean	1202
Maximum	2820	Median	1270
SD	1029	Std. Error of Mean	343.1
Coefficient of Variation	0.856	Skewness	0.12
Mean of logged Data	5.902	SD of logged Data	2.328

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1840	95% Adjusted-CLT UCL (Chen-1995)	1781
		95% Modified-t UCL (Johnson-1978)	1843

Nonparametric Distribution Free UCLs

95% CLT UCL	1767	95% Jackknife UCL	1840
95% Standard Bootstrap UCL	1743	95% Bootstrap-t UCL	1839
95% Hall's Bootstrap UCL	1762	95% Percentile Bootstrap UCL	1744
95% BCA Bootstrap UCL	1734		
90% Chebyshev(Mean, Sd) UCL	2232	95% Chebyshev(Mean, Sd) UCL	2698
97.5% Chebyshev(Mean, Sd) UCL	3345	99% Chebyshev(Mean, Sd) UCL	4616

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.3	Mean	963.8
Maximum	2190	Median	990
SD	826.9	Std. Error of Mean	275.6
Coefficient of Variation	0.858	Skewness	0.106
Mean of logged Data	5.672	SD of logged Data	2.339

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1476	95% Adjusted-CLT UCL (Chen-1995)	1428

		95% Modified-t UCL (Johnson-1978)	1478

Nonparametric Distribution Free UCLs

95% CLT UCL	1417	95% Jackknife UCL	1476
95% Standard Bootstrap UCL	1399	95% Bootstrap-t UCL	1455
95% Hall's Bootstrap UCL	1409	95% Percentile Bootstrap UCL	1382
95% BCA Bootstrap UCL	1411		
90% Chebyshev(Mean, Sd) UCL	1791	95% Chebyshev(Mean, Sd) UCL	2165
97.5% Chebyshev(Mean, Sd) UCL	2685	99% Chebyshev(Mean, Sd) UCL	3706

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	17.8	Mean	1932
Maximum	4360	Median	1970
SD	1674	Std. Error of Mean	558
Coefficient of Variation	0.866	Skewness	0.152
Mean of logged Data	6.359	SD of logged Data	2.349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2970	95% Adjusted-CLT UCL (Chen-1995)	2880
		95% Modified-t UCL (Johnson-1978)	2975

Nonparametric Distribution Free UCLs

95% CLT UCL	2850	95% Jackknife UCL	2970
95% Standard Bootstrap UCL	2798	95% Bootstrap-t UCL	3026
95% Hall's Bootstrap UCL	2923	95% Percentile Bootstrap UCL	2803
95% BCA Bootstrap UCL	2854		
90% Chebyshev(Mean, Sd) UCL	3606	95% Chebyshev(Mean, Sd) UCL	4365
97.5% Chebyshev(Mean, Sd) UCL	5417	99% Chebyshev(Mean, Sd) UCL	7484

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	316.7
Maximum	720	Median	332
SD	269.6	Std. Error of Mean	89.86
Coefficient of Variation	0.851	Skewness	0.0712
Mean of logged Data	4.567	SD of logged Data	2.331

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	483.8	95% Adjusted-CLT UCL (Chen-1995)	466.8
		95% Modified-t UCL (Johnson-1978)	484.2

Nonparametric Distribution Free UCLs

95% CLT UCL	464.5	95% Jackknife UCL	483.8
95% Standard Bootstrap UCL	456.8	95% Bootstrap-t UCL	489.9
95% Hall's Bootstrap UCL	462.9	95% Percentile Bootstrap UCL	453.2
95% BCA Bootstrap UCL	461		
90% Chebyshev(Mean, Sd) UCL	586.3	95% Chebyshev(Mean, Sd) UCL	708.4
97.5% Chebyshev(Mean, Sd) UCL	877.9	99% Chebyshev(Mean, Sd) UCL	1211

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	21.2	Mean	2653
Maximum	6030	Median	2730
SD	2328	Std. Error of Mean	776.1
Coefficient of Variation	0.877	Skewness	0.222
Mean of logged Data	6.639	SD of logged Data	2.401

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4097	95% Adjusted-CLT UCL (Chen-1995)	3991
		95% Modified-t UCL (Johnson-1978)	4106

Nonparametric Distribution Free UCLs

95% CLT UCL	3930	95% Jackknife UCL	4097

95% Standard Bootstrap UCL	3850	95% Bootstrap-t UCL	4195
95% Hall's Bootstrap UCL	4096	95% Percentile Bootstrap UCL	3855
95% BCA Bootstrap UCL	3898		
90% Chebyshev(Mean, Sd) UCL	4982	95% Chebyshev(Mean, Sd) UCL	6037
97.5% Chebyshev(Mean, Sd) UCL	7500	99% Chebyshev(Mean, Sd) UCL	10376

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.275	Mean	28.61
Maximum	66.2	Median	21.7
SD	25.37	Std. Error of Mean	8.455
Coefficient of Variation	0.887	Skewness	0.245
Mean of logged Data	2.516	SD of logged Data	1.741

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.33	95% Adjusted-CLT UCL (Chen-1995)	43.25
		95% Modified-t UCL (Johnson-1978)	44.45

Nonparametric Distribution Free UCLs

95% CLT UCL	42.52	95% Jackknife UCL	44.33
95% Standard Bootstrap UCL	41.81	95% Bootstrap-t UCL	46.01
95% Hall's Bootstrap UCL	40.97	95% Percentile Bootstrap UCL	41.62
95% BCA Bootstrap UCL	42.01		
90% Chebyshev(Mean, Sd) UCL	53.97	95% Chebyshev(Mean, Sd) UCL	65.46
97.5% Chebyshev(Mean, Sd) UCL	81.41	99% Chebyshev(Mean, Sd) UCL	112.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.6	Mean	1416
Maximum	3250	Median	1480

SD	1205	Std. Error of Mean	401.6
Coefficient of Variation	0.851	Skewness	0.0747
Mean of logged Data	6.059	SD of logged Data	2.34

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2162	95% Adjusted-CLT UCL (Chen-1995)	2087
		95% Modified-t UCL (Johnson-1978)	2164

Nonparametric Distribution Free UCLs

95% CLT UCL	2076	95% Jackknife UCL	2162
95% Standard Bootstrap UCL	2038	95% Bootstrap-t UCL	2174
95% Hall's Bootstrap UCL	2056	95% Percentile Bootstrap UCL	2027
95% BCA Bootstrap UCL	2049		
90% Chebyshev(Mean, Sd) UCL	2620	95% Chebyshev(Mean, Sd) UCL	3166
97.5% Chebyshev(Mean, Sd) UCL	3923	99% Chebyshev(Mean, Sd) UCL	5411

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.955	Mean	61.48
Maximum	120	Median	74
SD	50.59	Std. Error of Mean	16.86
Coefficient of Variation	0.823	Skewness	-0.273
Mean of logged Data	2.968	SD of logged Data	2.269

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	92.84	95% Adjusted-CLT UCL (Chen-1995)	87.58
		95% Modified-t UCL (Johnson-1978)	92.58

Nonparametric Distribution Free UCLs

95% CLT UCL	89.22	95% Jackknife UCL	92.84
95% Standard Bootstrap UCL	87.31	95% Bootstrap-t UCL	90.17
95% Hall's Bootstrap UCL	83.34	95% Percentile Bootstrap UCL	87.67
95% BCA Bootstrap UCL	85.63		
90% Chebyshev(Mean, Sd) UCL	112.1	95% Chebyshev(Mean, Sd) UCL	135

97.5% Chebyshev(Mean, Sd) UCL	166.8	99% Chebyshev(Mean, Sd) UCL	229.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.24	Mean	1229
Maximum	3100	Median	1230
SD	1116	Std. Error of Mean	371.9
Coefficient of Variation	0.908	Skewness	0.41
Mean of logged Data	5.802	SD of logged Data	2.485

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1920	95% Adjusted-CLT UCL (Chen-1995)	1895
		95% Modified-t UCL (Johnson-1978)	1929

Nonparametric Distribution Free UCLs

95% CLT UCL	1841	95% Jackknife UCL	1920
95% Standard Bootstrap UCL	1805	95% Bootstrap-t UCL	1999
95% Hall's Bootstrap UCL	1957	95% Percentile Bootstrap UCL	1814
95% BCA Bootstrap UCL	1865		
90% Chebyshev(Mean, Sd) UCL	2345	95% Chebyshev(Mean, Sd) UCL	2850
97.5% Chebyshev(Mean, Sd) UCL	3551	99% Chebyshev(Mean, Sd) UCL	4929

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	22.3	Mean	2596
Maximum	5860	Median	2610
SD	2259	Std. Error of Mean	752.9

Coefficient of Variation	0.87	Skewness	0.185
Mean of logged Data	6.642	SD of logged Data	2.368

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3996	95% Adjusted-CLT UCL (Chen-1995)	3884
		95% Modified-t UCL (Johnson-1978)	4004

Nonparametric Distribution Free UCLs

95% CLT UCL	3835	95% Jackknife UCL	3996
95% Standard Bootstrap UCL	3740	95% Bootstrap-t UCL	4057
95% Hall's Bootstrap UCL	3987	95% Percentile Bootstrap UCL	3813
95% BCA Bootstrap UCL	3727		
90% Chebyshev(Mean, Sd) UCL	4855	95% Chebyshev(Mean, Sd) UCL	5878
97.5% Chebyshev(Mean, Sd) UCL	7298	99% Chebyshev(Mean, Sd) UCL	10087

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:30:52 PM
From File	Thompson J_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	7.74	Mean	11.65
Maximum	15.3	Median	11.6
SD	2.463	Std. Error of Mean	0.537
Coefficient of Variation	0.211	Skewness	-0.113
Mean of logged Data	2.433	SD of logged Data	0.22

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.57	95% Adjusted-CLT UCL (Chen-1995)	12.52
		95% Modified-t UCL (Johnson-1978)	12.57

Nonparametric Distribution Free UCLs

95% CLT UCL	12.53	95% Jackknife UCL	12.57
95% Standard Bootstrap UCL	12.51	95% Bootstrap-t UCL	12.57
95% Hall's Bootstrap UCL	12.5	95% Percentile Bootstrap UCL	12.53
95% BCA Bootstrap UCL	12.5		
90% Chebyshev(Mean, Sd) UCL	13.26	95% Chebyshev(Mean, Sd) UCL	13.99
97.5% Chebyshev(Mean, Sd) UCL	15	99% Chebyshev(Mean, Sd) UCL	17

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	7.79	Mean	14.01
Maximum	37.3	Median	9.53
SD	8.522	Std. Error of Mean	1.86
Coefficient of Variation	0.608	Skewness	1.742
Mean of logged Data	2.508	SD of logged Data	0.489

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.22	95% Adjusted-CLT UCL (Chen-1995)	17.82
		95% Modified-t UCL (Johnson-1978)	17.33

Nonparametric Distribution Free UCLs

95% CLT UCL	17.07	95% Jackknife UCL	17.22
95% Standard Bootstrap UCL	17.09	95% Bootstrap-t UCL	18.55
95% Hall's Bootstrap UCL	18.46	95% Percentile Bootstrap UCL	16.99
95% BCA Bootstrap UCL	17.93		
90% Chebyshev(Mean, Sd) UCL	19.59	95% Chebyshev(Mean, Sd) UCL	22.11
97.5% Chebyshev(Mean, Sd) UCL	25.62	99% Chebyshev(Mean, Sd) UCL	32.51

Suggested UCL to Use

95% Student's-t UCL	17.22	or 95% Modified-t UCL	17.33

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	29.4	Mean	42.1
Maximum	53.7	Median	40.1
SD	7.935	Std. Error of Mean	1.731
Coefficient of Variation	0.188	Skewness	-0.00317
Mean of logged Data	3.723	SD of logged Data	0.192

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	45.09	95% Adjusted-CLT UCL (Chen-1995)	44.95
		95% Modified-t UCL (Johnson-1978)	45.09

Nonparametric Distribution Free UCLs

95% CLT UCL	44.95	95% Jackknife UCL	45.09
95% Standard Bootstrap UCL	44.86	95% Bootstrap-t UCL	45.01
95% Hall's Bootstrap UCL	44.88	95% Percentile Bootstrap UCL	44.89
95% BCA Bootstrap UCL	44.89		
90% Chebyshev(Mean, Sd) UCL	47.3	95% Chebyshev(Mean, Sd) UCL	49.65
97.5% Chebyshev(Mean, Sd) UCL	52.92	99% Chebyshev(Mean, Sd) UCL	59.33

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	0.634	Mean	28.44
Maximum	120	Median	1.98
SD	42.95	Std. Error of Mean	9.373
Coefficient of Variation	1.51	Skewness	1.245
Mean of logged Data	1.67	SD of logged Data	1.996

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.6	95% Adjusted-CLT UCL (Chen-1995)	46.58
		95% Modified-t UCL (Johnson-1978)	45.03

Nonparametric Distribution Free UCLs

95% CLT UCL	43.85	95% Jackknife UCL	44.6
95% Standard Bootstrap UCL	43.33	95% Bootstrap-t UCL	50.04
95% Hall's Bootstrap UCL	43.1	95% Percentile Bootstrap UCL	44.3
95% BCA Bootstrap UCL	45.69		
90% Chebyshev(Mean, Sd) UCL	56.56	95% Chebyshev(Mean, Sd) UCL	69.29
97.5% Chebyshev(Mean, Sd) UCL	86.97	99% Chebyshev(Mean, Sd) UCL	121.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	69.29

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	0.609	Mean	105.7
Maximum	455	Median	3.66
SD	162	Std. Error of Mean	35.35
Coefficient of Variation	1.533	Skewness	1.21
Mean of logged Data	2.668	SD of logged Data	2.252

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	166.7	95% Adjusted-CLT UCL (Chen-1995)	173.8
		95% Modified-t UCL (Johnson-1978)	168.2

Nonparametric Distribution Free UCLs

95% CLT UCL	163.8	95% Jackknife UCL	166.7
95% Standard Bootstrap UCL	162.8	95% Bootstrap-t UCL	184.8
95% Hall's Bootstrap UCL	161.5	95% Percentile Bootstrap UCL	165.3
95% BCA Bootstrap UCL	178.1		
90% Chebyshev(Mean, Sd) UCL	211.8	95% Chebyshev(Mean, Sd) UCL	259.8
97.5% Chebyshev(Mean, Sd) UCL	326.5	99% Chebyshev(Mean, Sd) UCL	457.5

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	326.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	3.22	Mean	311.6
Maximum	1380	Median	16.5
SD	482.5	Std. Error of Mean	105.3
Coefficient of Variation	1.548	Skewness	1.193
Mean of logged Data	3.849	SD of logged Data	2.13

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	493.2	95% Adjusted-CLT UCL (Chen-1995)	514.1
		95% Modified-t UCL (Johnson-1978)	497.8

Nonparametric Distribution Free UCLs

95% CLT UCL	484.8	95% Jackknife UCL	493.2
95% Standard Bootstrap UCL	480.9	95% Bootstrap-t UCL	544.8
95% Hall's Bootstrap UCL	477.8	95% Percentile Bootstrap UCL	478
95% BCA Bootstrap UCL	520		
90% Chebyshev(Mean, Sd) UCL	627.5	95% Chebyshev(Mean, Sd) UCL	770.5
97.5% Chebyshev(Mean, Sd) UCL	969.1	99% Chebyshev(Mean, Sd) UCL	1359

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	969.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	25.7	Mean	2040
Maximum	8700	Median	125
SD	3210	Std. Error of Mean	700.5
Coefficient of Variation	1.574	Skewness	1.277
Mean of logged Data	5.816	SD of logged Data	2.037

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	3248	95% Adjusted-CLT UCL (Chen-1995)	3401
		95% Modified-t UCL (Johnson-1978)	3281

Nonparametric Distribution Free UCLs

95% CLT UCL	3192	95% Jackknife UCL	3248
95% Standard Bootstrap UCL	3161	95% Bootstrap-t UCL	3496
95% Hall's Bootstrap UCL	3136	95% Percentile Bootstrap UCL	3236
95% BCA Bootstrap UCL	3366		
90% Chebyshev(Mean, Sd) UCL	4142	95% Chebyshev(Mean, Sd) UCL	5094
97.5% Chebyshev(Mean, Sd) UCL	6415	99% Chebyshev(Mean, Sd) UCL	9010

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	6415

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	30.2	Mean	2388
Maximum	9680	Median	150
SD	3678	Std. Error of Mean	802.6
Coefficient of Variation	1.54	Skewness	1.198
Mean of logged Data	6.028	SD of logged Data	2.01

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3772	95% Adjusted-CLT UCL (Chen-1995)	3932
		95% Modified-t UCL (Johnson-1978)	3807

Nonparametric Distribution Free UCLs

95% CLT UCL	3708	95% Jackknife UCL	3772
95% Standard Bootstrap UCL	3657	95% Bootstrap-t UCL	4035
95% Hall's Bootstrap UCL	3601	95% Percentile Bootstrap UCL	3750
95% BCA Bootstrap UCL	3936		
90% Chebyshev(Mean, Sd) UCL	4795	95% Chebyshev(Mean, Sd) UCL	5886
97.5% Chebyshev(Mean, Sd) UCL	7400	99% Chebyshev(Mean, Sd) UCL	10373

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	7400

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	42.1	Mean	3105

Maximum	12900	Median	180
SD	4878	Std. Error of Mean	1065
Coefficient of Variation	1.571	Skewness	1.231
Mean of logged Data	6.211	SD of logged Data	2.045

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4941	95% Adjusted-CLT UCL (Chen-1995)	5162
		95% Modified-t UCL (Johnson-1978)	4989

Nonparametric Distribution Free UCLs

95% CLT UCL	4856	95% Jackknife UCL	4941
95% Standard Bootstrap UCL	4851	95% Bootstrap-t UCL	5426
95% Hall's Bootstrap UCL	4719	95% Percentile Bootstrap UCL	4916
95% BCA Bootstrap UCL	5025		
90% Chebyshev(Mean, Sd) UCL	6299	95% Chebyshev(Mean, Sd) UCL	7746
97.5% Chebyshev(Mean, Sd) UCL	9753	99% Chebyshev(Mean, Sd) UCL	13697

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	9753

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	21.5	Mean	1504
Maximum	6150	Median	91.7
SD	2335	Std. Error of Mean	509.6
Coefficient of Variation	1.553	Skewness	1.18
Mean of logged Data	5.518	SD of logged Data	2.023

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2383	95% Adjusted-CLT UCL (Chen-1995)	2482
		95% Modified-t UCL (Johnson-1978)	2405

Nonparametric Distribution Free UCLs

95% CLT UCL	2342	95% Jackknife UCL	2383
95% Standard Bootstrap UCL	2337	95% Bootstrap-t UCL	2599
95% Hall's Bootstrap UCL	2267	95% Percentile Bootstrap UCL	2352
95% BCA Bootstrap UCL	2396		
90% Chebyshev(Mean, Sd) UCL	3033	95% Chebyshev(Mean, Sd) UCL	3725
97.5% Chebyshev(Mean, Sd) UCL	4686	99% Chebyshev(Mean, Sd) UCL	6574

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	4686

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	17.2	Mean	1247
Maximum	5180	Median	75
SD	1935	Std. Error of Mean	422.2
Coefficient of Variation	1.552	Skewness	1.201
Mean of logged Data	5.334	SD of logged Data	2.032

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1975	95% Adjusted-CLT UCL (Chen-1995)	2060
		95% Modified-t UCL (Johnson-1978)	1994

Nonparametric Distribution Free UCLs

95% CLT UCL	1941	95% Jackknife UCL	1975
95% Standard Bootstrap UCL	1921	95% Bootstrap-t UCL	2202
95% Hall's Bootstrap UCL	1872	95% Percentile Bootstrap UCL	1908
95% BCA Bootstrap UCL	2038		
90% Chebyshev(Mean, Sd) UCL	2514	95% Chebyshev(Mean, Sd) UCL	3087
97.5% Chebyshev(Mean, Sd) UCL	3884	99% Chebyshev(Mean, Sd) UCL	5448

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	3884

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	30.8	Mean	2494
Maximum	10800	Median	134
SD	3922	Std. Error of Mean	855.8
Coefficient of Variation	1.572	Skewness	1.285
Mean of logged Data	5.976	SD of logged Data	2.073

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3970	95% Adjusted-CLT UCL (Chen-1995)	4158
		95% Modified-t UCL (Johnson-1978)	4010

Nonparametric Distribution Free UCLs

95% CLT UCL	3902	95% Jackknife UCL	3970
95% Standard Bootstrap UCL	3868	95% Bootstrap-t UCL	4478

95% Hall's Bootstrap UCL	3761	95% Percentile Bootstrap UCL	3909
95% BCA Bootstrap UCL	3983		
90% Chebyshev(Mean, Sd) UCL	5062	95% Chebyshev(Mean, Sd) UCL	6225
97.5% Chebyshev(Mean, Sd) UCL	7839	99% Chebyshev(Mean, Sd) UCL	11010

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	7839

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	5.74	Mean	414.5
Maximum	1710	Median	25
SD	645	Std. Error of Mean	140.7
Coefficient of Variation	1.556	Skewness	1.215
Mean of logged Data	4.244	SD of logged Data	2.022

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	657.3	95% Adjusted-CLT UCL (Chen-1995)	685.9
		95% Modified-t UCL (Johnson-1978)	663.5

Nonparametric Distribution Free UCLs

95% CLT UCL	646	95% Jackknife UCL	657.3
95% Standard Bootstrap UCL	645.5	95% Bootstrap-t UCL	747.8
95% Hall's Bootstrap UCL	623.5	95% Percentile Bootstrap UCL	644.2
95% BCA Bootstrap UCL	698		
90% Chebyshev(Mean, Sd) UCL	836.8	95% Chebyshev(Mean, Sd) UCL	1028
97.5% Chebyshev(Mean, Sd) UCL	1293	99% Chebyshev(Mean, Sd) UCL	1815

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	1293

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	39.9	Mean	3405
Maximum	14900	Median	183
SD	5358	Std. Error of Mean	1169
Coefficient of Variation	1.573	Skewness	1.234
Mean of logged Data	6.255	SD of logged Data	2.088

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5421	95% Adjusted-CLT UCL (Chen-1995)	5664
		95% Modified-t UCL (Johnson-1978)	5474

Nonparametric Distribution Free UCLs

95% CLT UCL	5328	95% Jackknife UCL	5421
95% Standard Bootstrap UCL	5304	95% Bootstrap-t UCL	5856
95% Hall's Bootstrap UCL	5114	95% Percentile Bootstrap UCL	5386
95% BCA Bootstrap UCL	5530		
90% Chebyshev(Mean, Sd) UCL	6912	95% Chebyshev(Mean, Sd) UCL	8501
97.5% Chebyshev(Mean, Sd) UCL	10706	99% Chebyshev(Mean, Sd) UCL	15037

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	10706

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	0.915	Mean	50.42
Maximum	247	Median	2.4
SD	77.78	Std. Error of Mean	16.97
Coefficient of Variation	1.543	Skewness	1.342
Mean of logged Data	2.057	SD of logged Data	2.127

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	79.69	95% Adjusted-CLT UCL (Chen-1995)	83.64
		95% Modified-t UCL (Johnson-1978)	80.52

Nonparametric Distribution Free UCLs

95% CLT UCL	78.33	95% Jackknife UCL	79.69
95% Standard Bootstrap UCL	77.51	95% Bootstrap-t UCL	89.52
95% Hall's Bootstrap UCL	79.17	95% Percentile Bootstrap UCL	79.51
95% BCA Bootstrap UCL	83.66		
90% Chebyshev(Mean, Sd) UCL	101.3	95% Chebyshev(Mean, Sd) UCL	124.4
97.5% Chebyshev(Mean, Sd) UCL	156.4	99% Chebyshev(Mean, Sd) UCL	219.3

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	156.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	25	Mean	1716
Maximum	6740	Median	112
SD	2643	Std. Error of Mean	576.7
Coefficient of Variation	1.54	Skewness	1.163
Mean of logged Data	5.699	SD of logged Data	1.994

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2710	95% Adjusted-CLT UCL (Chen-1995)	2820
		95% Modified-t UCL (Johnson-1978)	2735

Nonparametric Distribution Free UCLs

95% CLT UCL	2664	95% Jackknife UCL	2710
95% Standard Bootstrap UCL	2616	95% Bootstrap-t UCL	3002
95% Hall's Bootstrap UCL	2580	95% Percentile Bootstrap UCL	2665
95% BCA Bootstrap UCL	2750		
90% Chebyshev(Mean, Sd) UCL	3446	95% Chebyshev(Mean, Sd) UCL	4229
97.5% Chebyshev(Mean, Sd) UCL	5317	99% Chebyshev(Mean, Sd) UCL	7453

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 4229

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	1.33	Mean	80.52
Maximum	338	Median	5.24
SD	124.9	Std. Error of Mean	27.25
Coefficient of Variation	1.551	Skewness	1.297
Mean of logged Data	2.584	SD of logged Data	2.087

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	127.5	95% Adjusted-CLT UCL (Chen-1995)	133.6
		95% Modified-t UCL (Johnson-1978)	128.8

Nonparametric Distribution Free UCLs

95% CLT UCL	125.3	95% Jackknife UCL	127.5
95% Standard Bootstrap UCL	123.7	95% Bootstrap-t UCL	144
95% Hall's Bootstrap UCL	121.7	95% Percentile Bootstrap UCL	126.9
95% BCA Bootstrap UCL	133.3		
90% Chebyshev(Mean, Sd) UCL	162.3	95% Chebyshev(Mean, Sd) UCL	199.3
97.5% Chebyshev(Mean, Sd) UCL	250.7	99% Chebyshev(Mean, Sd) UCL	351.7

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	250.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	16.7	Mean	1403
Maximum	6280	Median	77.9
SD	2188	Std. Error of Mean	477.5
Coefficient of Variation	1.559	Skewness	1.252
Mean of logged Data	5.406	SD of logged Data	2.085

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2227	95% Adjusted-CLT UCL (Chen-1995)	2328
		95% Modified-t UCL (Johnson-1978)	2249

Nonparametric Distribution Free UCLs

95% CLT UCL	2189	95% Jackknife UCL	2227
95% Standard Bootstrap UCL	2177	95% Bootstrap-t UCL	2374
95% Hall's Bootstrap UCL	2143	95% Percentile Bootstrap UCL	2240
95% BCA Bootstrap UCL	2266		
90% Chebyshev(Mean, Sd) UCL	2836	95% Chebyshev(Mean, Sd) UCL	3485
97.5% Chebyshev(Mean, Sd) UCL	4385	99% Chebyshev(Mean, Sd) UCL	6154

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	4385

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	36.6	Mean	3367
Maximum	14100	Median	172
SD	5256	Std. Error of Mean	1147
Coefficient of Variation	1.561	Skewness	1.21
Mean of logged Data	6.237	SD of logged Data	2.108

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5346	95% Adjusted-CLT UCL (Chen-1995)	5578
		95% Modified-t UCL (Johnson-1978)	5396

Nonparametric Distribution Free UCLs

95% CLT UCL	5254	95% Jackknife UCL	5346
95% Standard Bootstrap UCL	5231	95% Bootstrap-t UCL	5964
95% Hall's Bootstrap UCL	5070	95% Percentile Bootstrap UCL	5232
95% BCA Bootstrap UCL	5633		
90% Chebyshev(Mean, Sd) UCL	6808	95% Chebyshev(Mean, Sd) UCL	8367
97.5% Chebyshev(Mean, Sd) UCL	10531	99% Chebyshev(Mean, Sd) UCL	14780

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	10531

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:31:53 PM
From File	Thompson K_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	7.6	Mean	11.84
Maximum	17	Median	11.9
SD	2.977	Std. Error of Mean	0.65
Coefficient of Variation	0.251	Skewness	0.162
Mean of logged Data	2.441	SD of logged Data	0.258

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.96	95% Adjusted-CLT UCL (Chen-1995)	12.93
		95% Modified-t UCL (Johnson-1978)	12.97

Nonparametric Distribution Free UCLs

95% CLT UCL	12.91	95% Jackknife UCL	12.96
95% Standard Bootstrap UCL	12.88	95% Bootstrap-t UCL	12.97
95% Hall's Bootstrap UCL	12.9	95% Percentile Bootstrap UCL	12.92
95% BCA Bootstrap UCL	12.86		
90% Chebyshev(Mean, Sd) UCL	13.79	95% Chebyshev(Mean, Sd) UCL	14.67
97.5% Chebyshev(Mean, Sd) UCL	15.9	99% Chebyshev(Mean, Sd) UCL	18.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	7.85	Mean	19.51
Maximum	52.3	Median	11.2
SD	15.98	Std. Error of Mean	3.488
Coefficient of Variation	0.819	Skewness	1.137
Mean of logged Data	2.701	SD of logged Data	0.712

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	25.53	95% Adjusted-CLT UCL (Chen-1995)	26.18
		95% Modified-t UCL (Johnson-1978)	25.67

Nonparametric Distribution Free UCLs

95% CLT UCL	25.25	95% Jackknife UCL	25.53
95% Standard Bootstrap UCL	25.03	95% Bootstrap-t UCL	26.9
95% Hall's Bootstrap UCL	25.09	95% Percentile Bootstrap UCL	25.22
95% BCA Bootstrap UCL	26.15		
90% Chebyshev(Mean, Sd) UCL	29.98	95% Chebyshev(Mean, Sd) UCL	34.72
97.5% Chebyshev(Mean, Sd) UCL	41.3	99% Chebyshev(Mean, Sd) UCL	54.22

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	34.72

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	31	Mean	43.71
Maximum	58.2	Median	45
SD	8.986	Std. Error of Mean	1.961
Coefficient of Variation	0.206	Skewness	-0.0563
Mean of logged Data	3.757	SD of logged Data	0.212

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.09	95% Adjusted-CLT UCL (Chen-1995)	46.91
		95% Modified-t UCL (Johnson-1978)	47.09

Nonparametric Distribution Free UCLs

95% CLT UCL	46.94	95% Jackknife UCL	47.09
95% Standard Bootstrap UCL	46.87	95% Bootstrap-t UCL	47.06
95% Hall's Bootstrap UCL	46.86	95% Percentile Bootstrap UCL	46.87
95% BCA Bootstrap UCL	46.86		
90% Chebyshev(Mean, Sd) UCL	49.59	95% Chebyshev(Mean, Sd) UCL	52.26
97.5% Chebyshev(Mean, Sd) UCL	55.96	99% Chebyshev(Mean, Sd) UCL	63.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	19
		Number of Missing Observations	0
Minimum	0.975	Mean	36.76
Maximum	236	Median	2.98
SD	64.76	Std. Error of Mean	14.13
Coefficient of Variation	1.762	Skewness	2.059
Mean of logged Data	1.839	SD of logged Data	1.949

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	61.14	95% Adjusted-CLT UCL (Chen-1995)	66.79
		95% Modified-t UCL (Johnson-1978)	62.2

Nonparametric Distribution Free UCLs

95% CLT UCL	60.01	95% Jackknife UCL	61.14
95% Standard Bootstrap UCL	59.36	95% Bootstrap-t UCL	79.66
95% Hall's Bootstrap UCL	74.15	95% Percentile Bootstrap UCL	60.17
95% BCA Bootstrap UCL	64.74		
90% Chebyshev(Mean, Sd) UCL	79.16	95% Chebyshev(Mean, Sd) UCL	98.37
97.5% Chebyshev(Mean, Sd) UCL	125	99% Chebyshev(Mean, Sd) UCL	177.4

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 98.37

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	19
		Number of Missing Observations	0
Minimum	0.52	Mean	127.1
Maximum	804	Median	8.55
SD	227.3	Std. Error of Mean	49.6
Coefficient of Variation	1.789	Skewness	2.046
Mean of logged Data	2.622	SD of logged Data	2.451

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	212.6	95% Adjusted-CLT UCL (Chen-1995)	232.3
		95% Modified-t UCL (Johnson-1978)	216.3

Nonparametric Distribution Free UCLs

95% CLT UCL	208.7	95% Jackknife UCL	212.6
95% Standard Bootstrap UCL	206.6	95% Bootstrap-t UCL	268.2
95% Hall's Bootstrap UCL	282.8	95% Percentile Bootstrap UCL	213
95% BCA Bootstrap UCL	228.8		
90% Chebyshev(Mean, Sd) UCL	275.9	95% Chebyshev(Mean, Sd) UCL	343.3
97.5% Chebyshev(Mean, Sd) UCL	436.9	99% Chebyshev(Mean, Sd) UCL	620.6

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	2.99	Mean	429
Maximum	2300	Median	21.9
SD	731.7	Std. Error of Mean	159.7
Coefficient of Variation	1.705	Skewness	1.733
Mean of logged Data	4.053	SD of logged Data	2.215

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	704.4	95% Adjusted-CLT UCL (Chen-1995)	756.2
		95% Modified-t UCL (Johnson-1978)	714.5

Nonparametric Distribution Free UCLs

95% CLT UCL	691.7	95% Jackknife UCL	704.4
95% Standard Bootstrap UCL	675.7	95% Bootstrap-t UCL	831.5
95% Hall's Bootstrap UCL	749.9	95% Percentile Bootstrap UCL	712.9
95% BCA Bootstrap UCL	731.4		
90% Chebyshev(Mean, Sd) UCL	908	95% Chebyshev(Mean, Sd) UCL	1125
97.5% Chebyshev(Mean, Sd) UCL	1426	99% Chebyshev(Mean, Sd) UCL	2018

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	1426

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	22.9	Mean	2972
Maximum	15000	Median	161
SD	4905	Std. Error of Mean	1070
Coefficient of Variation	1.651	Skewness	1.528
Mean of logged Data	6.008	SD of logged Data	2.183

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4818	95% Adjusted-CLT UCL (Chen-1995)	5113
		95% Modified-t UCL (Johnson-1978)	4877

Nonparametric Distribution Free UCLs

95% CLT UCL	4732	95% Jackknife UCL	4818
95% Standard Bootstrap UCL	4675	95% Bootstrap-t UCL	5446
95% Hall's Bootstrap UCL	4919	95% Percentile Bootstrap UCL	4707
95% BCA Bootstrap UCL	5008		
90% Chebyshev(Mean, Sd) UCL	6183	95% Chebyshev(Mean, Sd) UCL	7637
97.5% Chebyshev(Mean, Sd) UCL	9656	99% Chebyshev(Mean, Sd) UCL	13622

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	9656

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	29	Mean	3370
Maximum	17300	Median	191
SD	5545	Std. Error of Mean	1210
Coefficient of Variation	1.645	Skewness	1.545
Mean of logged Data	6.197	SD of logged Data	2.133

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5457	95% Adjusted-CLT UCL (Chen-1995)	5796
		95% Modified-t UCL (Johnson-1978)	5525

Nonparametric Distribution Free UCLs

95% CLT UCL	5360	95% Jackknife UCL	5457
95% Standard Bootstrap UCL	5280	95% Bootstrap-t UCL	6192
95% Hall's Bootstrap UCL	5456	95% Percentile Bootstrap UCL	5372
95% BCA Bootstrap UCL	5674		
90% Chebyshev(Mean, Sd) UCL	7000	95% Chebyshev(Mean, Sd) UCL	8644
97.5% Chebyshev(Mean, Sd) UCL	10926	99% Chebyshev(Mean, Sd) UCL	15409

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	10926

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	33	Mean	4303
Maximum	21600	Median	235
SD	7052	Std. Error of Mean	1539
Coefficient of Variation	1.639	Skewness	1.488

Mean of logged Data	6.382	SD of logged Data	2.182

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6957	95% Adjusted-CLT UCL (Chen-1995)	7368
		95% Modified-t UCL (Johnson-1978)	7041

Nonparametric Distribution Free UCLs

95% CLT UCL	6834	95% Jackknife UCL	6957
95% Standard Bootstrap UCL	6772	95% Bootstrap-t UCL	7751
95% Hall's Bootstrap UCL	7047	95% Percentile Bootstrap UCL	7059
95% BCA Bootstrap UCL	7241		
90% Chebyshev(Mean, Sd) UCL	8920	95% Chebyshev(Mean, Sd) UCL	11011
97.5% Chebyshev(Mean, Sd) UCL	13914	99% Chebyshev(Mean, Sd) UCL	19615

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	13914

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	16.3	Mean	1978
Maximum	9810	Median	115
SD	3214	Std. Error of Mean	701.4
Coefficient of Variation	1.625	Skewness	1.474
Mean of logged Data	5.674	SD of logged Data	2.138

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3188	95% Adjusted-CLT UCL (Chen-1995)	3373
		95% Modified-t UCL (Johnson-1978)	3225

Nonparametric Distribution Free UCLs

95% CLT UCL	3132	95% Jackknife UCL	3188
95% Standard Bootstrap UCL	3137	95% Bootstrap-t UCL	3450
95% Hall's Bootstrap UCL	3189	95% Percentile Bootstrap UCL	3238
95% BCA Bootstrap UCL	3348		
90% Chebyshev(Mean, Sd) UCL	4082	95% Chebyshev(Mean, Sd) UCL	5035
97.5% Chebyshev(Mean, Sd) UCL	6358	99% Chebyshev(Mean, Sd) UCL	8957

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	6358

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	13.9	Mean	1761
Maximum	8920	Median	92
SD	2902	Std. Error of Mean	633.2
Coefficient of Variation	1.647	Skewness	1.507
Mean of logged Data	5.476	SD of logged Data	2.18

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2853	95% Adjusted-CLT UCL (Chen-1995)	3025
		95% Modified-t UCL (Johnson-1978)	2888

Nonparametric Distribution Free UCLs

95% CLT UCL	2803	95% Jackknife UCL	2853
95% Standard Bootstrap UCL	2754	95% Bootstrap-t UCL	3292
95% Hall's Bootstrap UCL	2800	95% Percentile Bootstrap UCL	2812
95% BCA Bootstrap UCL	2986		
90% Chebyshev(Mean, Sd) UCL	3661	95% Chebyshev(Mean, Sd) UCL	4521
97.5% Chebyshev(Mean, Sd) UCL	5716	99% Chebyshev(Mean, Sd) UCL	8061

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	5716

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	28.7	Mean	3323
Maximum	16800	Median	192
SD	5452	Std. Error of Mean	1190
Coefficient of Variation	1.641	Skewness	1.514
Mean of logged Data	6.172	SD of logged Data	2.141

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5375	95% Adjusted-CLT UCL (Chen-1995)	5700
		95% Modified-t UCL (Johnson-1978)	5440

Nonparametric Distribution Free UCLs

95% CLT UCL	5280	95% Jackknife UCL	5375
95% Standard Bootstrap UCL	5243	95% Bootstrap-t UCL	6097
95% Hall's Bootstrap UCL	5479	95% Percentile Bootstrap UCL	5408
95% BCA Bootstrap UCL	5567		
90% Chebyshev(Mean, Sd) UCL	6892	95% Chebyshev(Mean, Sd) UCL	8509

97.5% Chebyshev(Mean, Sd) UCL	10753	99% Chebyshev(Mean, Sd) UCL	15160

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	10753

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	3.98	Mean	575.6
Maximum	2920	Median	33.9
SD	945.2	Std. Error of Mean	206.3
Coefficient of Variation	1.642	Skewness	1.51
Mean of logged Data	4.378	SD of logged Data	2.183

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	931.4	95% Adjusted-CLT UCL (Chen-1995)	987.5
		95% Modified-t UCL (Johnson-1978)	942.7

Nonparametric Distribution Free UCLs

95% CLT UCL	914.9	95% Jackknife UCL	931.4
95% Standard Bootstrap UCL	912.4	95% Bootstrap-t UCL	1100
95% Hall's Bootstrap UCL	947.3	95% Percentile Bootstrap UCL	911.9
95% BCA Bootstrap UCL	998.3		
90% Chebyshev(Mean, Sd) UCL	1194	95% Chebyshev(Mean, Sd) UCL	1475
97.5% Chebyshev(Mean, Sd) UCL	1864	99% Chebyshev(Mean, Sd) UCL	2628

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	36.8	Mean	5029
Maximum	24500	Median	247
SD	8229	Std. Error of Mean	1796
Coefficient of Variation	1.636	Skewness	1.448
Mean of logged Data	6.487	SD of logged Data	2.22

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8126	95% Adjusted-CLT UCL (Chen-1995)	8589
		95% Modified-t UCL (Johnson-1978)	8221

Nonparametric Distribution Free UCLs

95% CLT UCL	7983	95% Jackknife UCL	8126
95% Standard Bootstrap UCL	7858	95% Bootstrap-t UCL	9252
95% Hall's Bootstrap UCL	8070	95% Percentile Bootstrap UCL	8068
95% BCA Bootstrap UCL	8457		
90% Chebyshev(Mean, Sd) UCL	10416	95% Chebyshev(Mean, Sd) UCL	12856
97.5% Chebyshev(Mean, Sd) UCL	16243	99% Chebyshev(Mean, Sd) UCL	22895

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	16243

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	1.3	Mean	55.17
Maximum	347	Median	3.34
SD	101.1	Std. Error of Mean	22.07
Coefficient of Variation	1.833	Skewness	2.158
Mean of logged Data	2.113	SD of logged Data	2.047

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	93.23	95% Adjusted-CLT UCL (Chen-1995)	102.6
		95% Modified-t UCL (Johnson-1978)	94.96

Nonparametric Distribution Free UCLs

95% CLT UCL	91.47	95% Jackknife UCL	93.23
95% Standard Bootstrap UCL	91.2	95% Bootstrap-t UCL	136.7
95% Hall's Bootstrap UCL	141.9	95% Percentile Bootstrap UCL	94.2
95% BCA Bootstrap UCL	105.2		
90% Chebyshev(Mean, Sd) UCL	121.4	95% Chebyshev(Mean, Sd) UCL	151.4
97.5% Chebyshev(Mean, Sd) UCL	193	99% Chebyshev(Mean, Sd) UCL	274.7

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	193

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0

Minimum	20.6	Mean	2279
Maximum	11400	Median	132
SD	3704	Std. Error of Mean	808.3
Coefficient of Variation	1.625	Skewness	1.484
Mean of logged Data	5.834	SD of logged Data	2.119

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3673	95% Adjusted-CLT UCL (Chen-1995)	3888
		95% Modified-t UCL (Johnson-1978)	3716

Nonparametric Distribution Free UCLs

95% CLT UCL	3608	95% Jackknife UCL	3673
95% Standard Bootstrap UCL	3544	95% Bootstrap-t UCL	4065
95% Hall's Bootstrap UCL	3731	95% Percentile Bootstrap UCL	3623
95% BCA Bootstrap UCL	3879		
90% Chebyshev(Mean, Sd) UCL	4703	95% Chebyshev(Mean, Sd) UCL	5802
97.5% Chebyshev(Mean, Sd) UCL	7326	99% Chebyshev(Mean, Sd) UCL	10321

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	7326

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	2.09	Mean	104.3
Maximum	700	Median	8.03
SD	187.8	Std. Error of Mean	40.99
Coefficient of Variation	1.801	Skewness	2.191
Mean of logged Data	2.889	SD of logged Data	1.937

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	175	95% Adjusted-CLT UCL (Chen-1995)	192.7
		95% Modified-t UCL (Johnson-1978)	178.3

Nonparametric Distribution Free UCLs

95% CLT UCL	171.7	95% Jackknife UCL	175
95% Standard Bootstrap UCL	171.4	95% Bootstrap-t UCL	223.1
95% Hall's Bootstrap UCL	239.5	95% Percentile Bootstrap UCL	175.8
95% BCA Bootstrap UCL	188.9		
90% Chebyshev(Mean, Sd) UCL	227.3	95% Chebyshev(Mean, Sd) UCL	283
97.5% Chebyshev(Mean, Sd) UCL	360.3	99% Chebyshev(Mean, Sd) UCL	512.1

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	283

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	14.6	Mean	2036
Maximum	9590	Median	112
SD	3301	Std. Error of Mean	720.3
Coefficient of Variation	1.621	Skewness	1.447
Mean of logged Data	5.648	SD of logged Data	2.206

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3278	95% Adjusted-CLT UCL (Chen-1995)	3464
		95% Modified-t UCL (Johnson-1978)	3316

Nonparametric Distribution Free UCLs

95% CLT UCL	3221	95% Jackknife UCL	3278
95% Standard Bootstrap UCL	3183	95% Bootstrap-t UCL	3726
95% Hall's Bootstrap UCL	3221	95% Percentile Bootstrap UCL	3222
95% BCA Bootstrap UCL	3392		
90% Chebyshev(Mean, Sd) UCL	4197	95% Chebyshev(Mean, Sd) UCL	5176
97.5% Chebyshev(Mean, Sd) UCL	6534	99% Chebyshev(Mean, Sd) UCL	9203

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	37.9	Mean	4797
Maximum	24200	Median	248
SD	7903	Std. Error of Mean	1724
Coefficient of Variation	1.647	Skewness	1.512
Mean of logged Data	6.474	SD of logged Data	2.188

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7772	95% Adjusted-CLT UCL (Chen-1995)	8242
		95% Modified-t UCL (Johnson-1978)	7866

Nonparametric Distribution Free UCLs

95% CLT UCL	7634	95% Jackknife UCL	7772

95% Standard Bootstrap UCL	7536	95% Bootstrap-t UCL	8952
95% Hall's Bootstrap UCL	7765	95% Percentile Bootstrap UCL	7755
95% BCA Bootstrap UCL	8220		
90% Chebyshev(Mean, Sd) UCL	9971	95% Chebyshev(Mean, Sd) UCL	12314
97.5% Chebyshev(Mean, Sd) UCL	15567	99% Chebyshev(Mean, Sd) UCL	21956

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	15567

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:33:04 PM
From File	Thompson L_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	21	Number of Distinct Observations	19
		Number of Missing Observations	0
Minimum	7.49	Mean	11.23
Maximum	15.8	Median	11.1
SD	2.97	Std. Error of Mean	0.648
Coefficient of Variation	0.265	Skewness	0.11
Mean of logged Data	2.384	SD of logged Data	0.27

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.35	95% Adjusted-CLT UCL (Chen-1995)	12.31
		95% Modified-t UCL (Johnson-1978)	12.35

Nonparametric Distribution Free UCLs

95% CLT UCL	12.29	95% Jackknife UCL	12.35
95% Standard Bootstrap UCL	12.29	95% Bootstrap-t UCL	12.37
95% Hall's Bootstrap UCL	12.32	95% Percentile Bootstrap UCL	12.29
95% BCA Bootstrap UCL	12.3		
90% Chebyshev(Mean, Sd) UCL	13.17	95% Chebyshev(Mean, Sd) UCL	14.05
97.5% Chebyshev(Mean, Sd) UCL	15.28	99% Chebyshev(Mean, Sd) UCL	17.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	7.38	Mean	28.2
Maximum	138	Median	9.78
SD	35.15	Std. Error of Mean	7.669
Coefficient of Variation	1.246	Skewness	2.031
Mean of logged Data	2.81	SD of logged Data	0.958

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	41.43	95% Adjusted-CLT UCL (Chen-1995)	44.45
		95% Modified-t UCL (Johnson-1978)	41.99

Nonparametric Distribution Free UCLs

95% CLT UCL	40.82	95% Jackknife UCL	41.43
95% Standard Bootstrap UCL	40.49	95% Bootstrap-t UCL	49.93
95% Hall's Bootstrap UCL	45.79	95% Percentile Bootstrap UCL	41.21
95% BCA Bootstrap UCL	44.43		
90% Chebyshev(Mean, Sd) UCL	51.21	95% Chebyshev(Mean, Sd) UCL	61.63
97.5% Chebyshev(Mean, Sd) UCL	76.1	99% Chebyshev(Mean, Sd) UCL	104.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	61.63

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	21	Number of Distinct Observations	19
		Number of Missing Observations	0
Minimum	31	Mean	43.8
Maximum	62.3	Median	41.6
SD	10.82	Std. Error of Mean	2.361
Coefficient of Variation	0.247	Skewness	0.0881
Mean of logged Data	3.75	SD of logged Data	0.252

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.87	95% Adjusted-CLT UCL (Chen-1995)	47.73
		95% Modified-t UCL (Johnson-1978)	47.88

Nonparametric Distribution Free UCLs

95% CLT UCL	47.68	95% Jackknife UCL	47.87
95% Standard Bootstrap UCL	47.65	95% Bootstrap-t UCL	47.99
95% Hall's Bootstrap UCL	47.4	95% Percentile Bootstrap UCL	47.49
95% BCA Bootstrap UCL	47.8		
90% Chebyshev(Mean, Sd) UCL	50.88	95% Chebyshev(Mean, Sd) UCL	54.09
97.5% Chebyshev(Mean, Sd) UCL	58.54	99% Chebyshev(Mean, Sd) UCL	67.29

Suggested UCL to Use

95% Student's-t UCL	47.87	or 95% Modified-t UCL	47.88

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	0.877	Mean	100.7

Maximum	494	Median	14.3
SD	161.8	Std. Error of Mean	35.31
Coefficient of Variation	1.606	Skewness	1.516
Mean of logged Data	2.894	SD of logged Data	2.048

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	161.6	95% Adjusted-CLT UCL (Chen-1995)	171.3
		95% Modified-t UCL (Johnson-1978)	163.6

Nonparametric Distribution Free UCLs

95% CLT UCL	158.8	95% Jackknife UCL	161.6
95% Standard Bootstrap UCL	157.4	95% Bootstrap-t UCL	186.4
95% Hall's Bootstrap UCL	161.3	95% Percentile Bootstrap UCL	160.8
95% BCA Bootstrap UCL	169.9		
90% Chebyshev(Mean, Sd) UCL	206.7	95% Chebyshev(Mean, Sd) UCL	254.6
97.5% Chebyshev(Mean, Sd) UCL	321.2	99% Chebyshev(Mean, Sd) UCL	452.1

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	321.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	2.44	Mean	335.8
Maximum	1750	Median	36.5
SD	533.2	Std. Error of Mean	116.4
Coefficient of Variation	1.588	Skewness	1.5
Mean of logged Data	3.983	SD of logged Data	2.167

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	536.4	95% Adjusted-CLT UCL (Chen-1995)	567.8
		95% Modified-t UCL (Johnson-1978)	542.8

Nonparametric Distribution Free UCLs

95% CLT UCL	527.1	95% Jackknife UCL	536.4
95% Standard Bootstrap UCL	520.4	95% Bootstrap-t UCL	604.2
95% Hall's Bootstrap UCL	542.1	95% Percentile Bootstrap UCL	533.8
95% BCA Bootstrap UCL	570.5		
90% Chebyshev(Mean, Sd) UCL	684.8	95% Chebyshev(Mean, Sd) UCL	842.9
97.5% Chebyshev(Mean, Sd) UCL	1062	99% Chebyshev(Mean, Sd) UCL	1493

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	7.81	Mean	1151
Maximum	5980	Median	111
SD	1879	Std. Error of Mean	410.1
Coefficient of Variation	1.633	Skewness	1.551
Mean of logged Data	5.157	SD of logged Data	2.174

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1858	95% Adjusted-CLT UCL (Chen-1995)	1974
		95% Modified-t UCL (Johnson-1978)	1881

Nonparametric Distribution Free UCLs

95% CLT UCL	1825	95% Jackknife UCL	1858
95% Standard Bootstrap UCL	1814	95% Bootstrap-t UCL	2174
95% Hall's Bootstrap UCL	1829	95% Percentile Bootstrap UCL	1837
95% BCA Bootstrap UCL	1968		
90% Chebyshev(Mean, Sd) UCL	2381	95% Chebyshev(Mean, Sd) UCL	2939
97.5% Chebyshev(Mean, Sd) UCL	3712	99% Chebyshev(Mean, Sd) UCL	5232

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	75.1	Mean	6548
Maximum	31400	Median	767
SD	10250	Std. Error of Mean	2237
Coefficient of Variation	1.565	Skewness	1.388
Mean of logged Data	7.046	SD of logged Data	2.079

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10406	95% Adjusted-CLT UCL (Chen-1995)	10952
		95% Modified-t UCL (Johnson-1978)	10519

Nonparametric Distribution Free UCLs

95% CLT UCL	10228	95% Jackknife UCL	10406
95% Standard Bootstrap UCL	10141	95% Bootstrap-t UCL	11759

95% Hall's Bootstrap UCL	10034	95% Percentile Bootstrap UCL	10253
95% BCA Bootstrap UCL	11120		
90% Chebyshev(Mean, Sd) UCL	13259	95% Chebyshev(Mean, Sd) UCL	16298
97.5% Chebyshev(Mean, Sd) UCL	20517	99% Chebyshev(Mean, Sd) UCL	28804

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	85.2	Mean	7171
Maximum	33600	Median	947
SD	11072	Std. Error of Mean	2416
Coefficient of Variation	1.544	Skewness	1.362
Mean of logged Data	7.237	SD of logged Data	2

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11338	95% Adjusted-CLT UCL (Chen-1995)	11913
		95% Modified-t UCL (Johnson-1978)	11458

Nonparametric Distribution Free UCLs

95% CLT UCL	11145	95% Jackknife UCL	11338
95% Standard Bootstrap UCL	11035	95% Bootstrap-t UCL	12743
95% Hall's Bootstrap UCL	10925	95% Percentile Bootstrap UCL	11074
95% BCA Bootstrap UCL	11874		
90% Chebyshev(Mean, Sd) UCL	14420	95% Chebyshev(Mean, Sd) UCL	17703
97.5% Chebyshev(Mean, Sd) UCL	22260	99% Chebyshev(Mean, Sd) UCL	31212

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	126	Mean	9081
Maximum	43200	Median	1090
SD	14122	Std. Error of Mean	3082
Coefficient of Variation	1.555	Skewness	1.369
Mean of logged Data	7.433	SD of logged Data	2.019

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14396	95% Adjusted-CLT UCL (Chen-1995)	15134
		95% Modified-t UCL (Johnson-1978)	14549

Nonparametric Distribution Free UCLs

95% CLT UCL	14150	95% Jackknife UCL	14396
95% Standard Bootstrap UCL	14001	95% Bootstrap-t UCL	16195
95% Hall's Bootstrap UCL	13886	95% Percentile Bootstrap UCL	14421
95% BCA Bootstrap UCL	14833		
90% Chebyshev(Mean, Sd) UCL	18326	95% Chebyshev(Mean, Sd) UCL	22514
97.5% Chebyshev(Mean, Sd) UCL	28326	99% Chebyshev(Mean, Sd) UCL	39744

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	69.5	Mean	4292
Maximum	19300	Median	564
SD	6562	Std. Error of Mean	1432
Coefficient of Variation	1.529	Skewness	1.31
Mean of logged Data	6.771	SD of logged Data	1.952

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6762	95% Adjusted-CLT UCL (Chen-1995)	7085
		95% Modified-t UCL (Johnson-1978)	6830

Nonparametric Distribution Free UCLs

95% CLT UCL	6648	95% Jackknife UCL	6762
95% Standard Bootstrap UCL	6591	95% Bootstrap-t UCL	7431
95% Hall's Bootstrap UCL	6502	95% Percentile Bootstrap UCL	6601
95% BCA Bootstrap UCL	7099		
90% Chebyshev(Mean, Sd) UCL	8588	95% Chebyshev(Mean, Sd) UCL	10534
97.5% Chebyshev(Mean, Sd) UCL	13235	99% Chebyshev(Mean, Sd) UCL	18540

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	49.3	Mean	3306
Maximum	15000	Median	434
SD	5089	Std. Error of Mean	1110
Coefficient of Variation	1.539	Skewness	1.341
Mean of logged Data	6.484	SD of logged Data	1.976

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5221	95% Adjusted-CLT UCL (Chen-1995)	5480
		95% Modified-t UCL (Johnson-1978)	5275

Nonparametric Distribution Free UCLs

95% CLT UCL	5133	95% Jackknife UCL	5221
95% Standard Bootstrap UCL	5115	95% Bootstrap-t UCL	5949
95% Hall's Bootstrap UCL	5059	95% Percentile Bootstrap UCL	5170
95% BCA Bootstrap UCL	5581		
90% Chebyshev(Mean, Sd) UCL	6637	95% Chebyshev(Mean, Sd) UCL	8146
97.5% Chebyshev(Mean, Sd) UCL	10241	99% Chebyshev(Mean, Sd) UCL	14355

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	94.6	Mean	8078
Maximum	38300	Median	885
SD	12644	Std. Error of Mean	2759
Coefficient of Variation	1.565	Skewness	1.364
Mean of logged Data	7.248	SD of logged Data	2.07

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12837	95% Adjusted-CLT UCL (Chen-1995)	13494
		95% Modified-t UCL (Johnson-1978)	12974

Nonparametric Distribution Free UCLs

95% CLT UCL	12617	95% Jackknife UCL	12837
95% Standard Bootstrap UCL	12535	95% Bootstrap-t UCL	14406
95% Hall's Bootstrap UCL	12540	95% Percentile Bootstrap UCL	12737
95% BCA Bootstrap UCL	13532		
90% Chebyshev(Mean, Sd) UCL	16356	95% Chebyshev(Mean, Sd) UCL	20105
97.5% Chebyshev(Mean, Sd) UCL	25309	99% Chebyshev(Mean, Sd) UCL	35531

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	16.1	Mean	1261
Maximum	5690	Median	172
SD	1854	Std. Error of Mean	404.6
Coefficient of Variation	1.471	Skewness	1.311
Mean of logged Data	5.553	SD of logged Data	2.009

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1959	95% Adjusted-CLT UCL (Chen-1995)	2050
		95% Modified-t UCL (Johnson-1978)	1978

Nonparametric Distribution Free UCLs

95% CLT UCL	1926	95% Jackknife UCL	1959
95% Standard Bootstrap UCL	1903	95% Bootstrap-t UCL	2141
95% Hall's Bootstrap UCL	1929	95% Percentile Bootstrap UCL	1956
95% BCA Bootstrap UCL	2021		
90% Chebyshev(Mean, Sd) UCL	2474	95% Chebyshev(Mean, Sd) UCL	3024
97.5% Chebyshev(Mean, Sd) UCL	3787	99% Chebyshev(Mean, Sd) UCL	5286

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	130	Mean	11982
Maximum	59700	Median	1220
SD	19123	Std. Error of Mean	4173
Coefficient of Variation	1.596	Skewness	1.44
Mean of logged Data	7.567	SD of logged Data	2.117

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19179	95% Adjusted-CLT UCL (Chen-1995)	20247
		95% Modified-t UCL (Johnson-1978)	19398

Nonparametric Distribution Free UCLs

95% CLT UCL	18846	95% Jackknife UCL	19179
95% Standard Bootstrap UCL	18635	95% Bootstrap-t UCL	21386
95% Hall's Bootstrap UCL	18677	95% Percentile Bootstrap UCL	18875
95% BCA Bootstrap UCL	20304		
90% Chebyshev(Mean, Sd) UCL	24501	95% Chebyshev(Mean, Sd) UCL	30172
97.5% Chebyshev(Mean, Sd) UCL	38042	99% Chebyshev(Mean, Sd) UCL	53503

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	1.04	Mean	165.6
Maximum	855	Median	15.9
SD	264.7	Std. Error of Mean	57.75
Coefficient of Variation	1.599	Skewness	1.52
Mean of logged Data	3.324	SD of logged Data	2.114

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	265.2	95% Adjusted-CLT UCL (Chen-1995)	281
		95% Modified-t UCL (Johnson-1978)	268.4

Nonparametric Distribution Free UCLs

95% CLT UCL	260.5	95% Jackknife UCL	265.2
95% Standard Bootstrap UCL	259.8	95% Bootstrap-t UCL	291.7
95% Hall's Bootstrap UCL	264.6	95% Percentile Bootstrap UCL	264.9
95% BCA Bootstrap UCL	274.2		
90% Chebyshev(Mean, Sd) UCL	338.8	95% Chebyshev(Mean, Sd) UCL	417.3
97.5% Chebyshev(Mean, Sd) UCL	526.2	99% Chebyshev(Mean, Sd) UCL	740.2

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	72.4	Mean	4904
Maximum	21500	Median	769
SD	7446	Std. Error of Mean	1625

Coefficient of Variation	1.518	Skewness	1.3
Mean of logged Data	6.937	SD of logged Data	1.94

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7706	95% Adjusted-CLT UCL (Chen-1995)	8069
		95% Modified-t UCL (Johnson-1978)	7783

Nonparametric Distribution Free UCLs

95% CLT UCL	7577	95% Jackknife UCL	7706
95% Standard Bootstrap UCL	7529	95% Bootstrap-t UCL	8473
95% Hall's Bootstrap UCL	7455	95% Percentile Bootstrap UCL	7609
95% BCA Bootstrap UCL	7943		
90% Chebyshev(Mean, Sd) UCL	9779	95% Chebyshev(Mean, Sd) UCL	11987
97.5% Chebyshev(Mean, Sd) UCL	15052	99% Chebyshev(Mean, Sd) UCL	21072

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	2.72	Mean	290.8
Maximum	1750	Median	38.9
SD	483.8	Std. Error of Mean	105.6
Coefficient of Variation	1.664	Skewness	1.844
Mean of logged Data	3.901	SD of logged Data	2.072

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	472.9	95% Adjusted-CLT UCL (Chen-1995)	509.8
		95% Modified-t UCL (Johnson-1978)	479.9

Nonparametric Distribution Free UCLs

95% CLT UCL	464.4	95% Jackknife UCL	472.9
95% Standard Bootstrap UCL	464.6	95% Bootstrap-t UCL	560.4
95% Hall's Bootstrap UCL	503	95% Percentile Bootstrap UCL	469.9
95% BCA Bootstrap UCL	512.8		
90% Chebyshev(Mean, Sd) UCL	607.5	95% Chebyshev(Mean, Sd) UCL	750.9
97.5% Chebyshev(Mean, Sd) UCL	950.1	99% Chebyshev(Mean, Sd) UCL	1341

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	950.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	47.2	Mean	5702
Maximum	29000	Median	521
SD	9176	Std. Error of Mean	2002
Coefficient of Variation	1.609	Skewness	1.477
Mean of logged Data	6.771	SD of logged Data	2.166

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9155	95% Adjusted-CLT UCL (Chen-1995)	9685
		95% Modified-t UCL (Johnson-1978)	9263

Nonparametric Distribution Free UCLs

95% CLT UCL	8995	95% Jackknife UCL	9155
95% Standard Bootstrap UCL	8870	95% Bootstrap-t UCL	10570
95% Hall's Bootstrap UCL	9010	95% Percentile Bootstrap UCL	9053
95% BCA Bootstrap UCL	9939		
90% Chebyshev(Mean, Sd) UCL	11709	95% Chebyshev(Mean, Sd) UCL	14430
97.5% Chebyshev(Mean, Sd) UCL	18207	99% Chebyshev(Mean, Sd) UCL	25625

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	121	Mean	11530
Maximum	56900	Median	1280
SD	18272	Std. Error of Mean	3987
Coefficient of Variation	1.585	Skewness	1.421
Mean of logged Data	7.559	SD of logged Data	2.103

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18407	95% Adjusted-CLT UCL (Chen-1995)	19410
		95% Modified-t UCL (Johnson-1978)	18613

Nonparametric Distribution Free UCLs

95% CLT UCL	18089	95% Jackknife UCL	18407
95% Standard Bootstrap UCL	17910	95% Bootstrap-t UCL	20231
95% Hall's Bootstrap UCL	17898	95% Percentile Bootstrap UCL	18135
95% BCA Bootstrap UCL	19729		

90% Chebyshev(Mean, Sd) UCL	23492	95% Chebyshev(Mean, Sd) UCL	28910
97.5% Chebyshev(Mean, Sd) UCL	36431	99% Chebyshev(Mean, Sd) UCL	51203

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:34:15 PM
From File	Thompson M_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	21	Number of Distinct Observations	18
		Number of Missing Observations	0
Minimum	5.52	Mean	10.52
Maximum	15.4	Median	10.7
SD	3.235	Std. Error of Mean	0.706
Coefficient of Variation	0.308	Skewness	0.134
Mean of logged Data	2.305	SD of logged Data	0.322

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.74	95% Adjusted-CLT UCL (Chen-1995)	11.7
		95% Modified-t UCL (Johnson-1978)	11.74

Nonparametric Distribution Free UCLs

95% CLT UCL	11.68	95% Jackknife UCL	11.74
95% Standard Bootstrap UCL	11.66	95% Bootstrap-t UCL	11.71
95% Hall's Bootstrap UCL	11.67	95% Percentile Bootstrap UCL	11.67
95% BCA Bootstrap UCL	11.75		
90% Chebyshev(Mean, Sd) UCL	12.64	95% Chebyshev(Mean, Sd) UCL	13.6
97.5% Chebyshev(Mean, Sd) UCL	14.93	99% Chebyshev(Mean, Sd) UCL	17.54

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	5.91	Mean	29.83
Maximum	177	Median	9.47
SD	43.28	Std. Error of Mean	9.445
Coefficient of Variation	1.451	Skewness	2.502
Mean of logged Data	2.771	SD of logged Data	1.016

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	46.12	95% Adjusted-CLT UCL (Chen-1995)	50.87
		95% Modified-t UCL (Johnson-1978)	46.98

Nonparametric Distribution Free UCLs

95% CLT UCL	45.36	95% Jackknife UCL	46.12
95% Standard Bootstrap UCL	44.9	95% Bootstrap-t UCL	59.73
95% Hall's Bootstrap UCL	49.49	95% Percentile Bootstrap UCL	46.57
95% BCA Bootstrap UCL	51.58		
90% Chebyshev(Mean, Sd) UCL	58.16	95% Chebyshev(Mean, Sd) UCL	71
97.5% Chebyshev(Mean, Sd) UCL	88.81	99% Chebyshev(Mean, Sd) UCL	123.8

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	71

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	22.4	Mean	39.63
Maximum	53.9	Median	40.4
SD	10.23	Std. Error of Mean	2.233
Coefficient of Variation	0.258	Skewness	-0.137
Mean of logged Data	3.645	SD of logged Data	0.274

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.48	95% Adjusted-CLT UCL (Chen-1995)	43.24
		95% Modified-t UCL (Johnson-1978)	43.47

Nonparametric Distribution Free UCLs

95% CLT UCL	43.31	95% Jackknife UCL	43.48
95% Standard Bootstrap UCL	43.3	95% Bootstrap-t UCL	43.44
95% Hall's Bootstrap UCL	43.22	95% Percentile Bootstrap UCL	43.3
95% BCA Bootstrap UCL	43.16		
90% Chebyshev(Mean, Sd) UCL	46.33	95% Chebyshev(Mean, Sd) UCL	49.37
97.5% Chebyshev(Mean, Sd) UCL	53.58	99% Chebyshev(Mean, Sd) UCL	61.85

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	0.768	Mean	31.54
Maximum	127	Median	2.73
SD	47.81	Std. Error of Mean	10.43
Coefficient of Variation	1.516	Skewness	1.178
Mean of logged Data	1.816	SD of logged Data	1.943

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.54	95% Adjusted-CLT UCL (Chen-1995)	51.57
		95% Modified-t UCL (Johnson-1978)	49.98

Nonparametric Distribution Free UCLs

95% CLT UCL	48.7	95% Jackknife UCL	49.54
95% Standard Bootstrap UCL	48.17	95% Bootstrap-t UCL	53.52
95% Hall's Bootstrap UCL	47.19	95% Percentile Bootstrap UCL	48.14
95% BCA Bootstrap UCL	51.25		
90% Chebyshev(Mean, Sd) UCL	62.84	95% Chebyshev(Mean, Sd) UCL	77.02
97.5% Chebyshev(Mean, Sd) UCL	96.7	99% Chebyshev(Mean, Sd) UCL	135.4

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	0.5	Mean	98.69
Maximum	478	Median	5.11
SD	162.3	Std. Error of Mean	35.42
Coefficient of Variation	1.645	Skewness	1.443
Mean of logged Data	2.224	SD of logged Data	2.56

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	159.8	95% Adjusted-CLT UCL (Chen-1995)	168.9
		95% Modified-t UCL (Johnson-1978)	161.6

Nonparametric Distribution Free UCLs

95% CLT UCL	156.9	95% Jackknife UCL	159.8
95% Standard Bootstrap UCL	155.3	95% Bootstrap-t UCL	180.9
95% Hall's Bootstrap UCL	152.9	95% Percentile Bootstrap UCL	159.5
95% BCA Bootstrap UCL	163.3		
90% Chebyshev(Mean, Sd) UCL	204.9	95% Chebyshev(Mean, Sd) UCL	253.1
97.5% Chebyshev(Mean, Sd) UCL	319.9	99% Chebyshev(Mean, Sd) UCL	451.1

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	2.6	Mean	366.1
Maximum	2080	Median	23.8
SD	626.2	Std. Error of Mean	136.7
Coefficient of Variation	1.711	Skewness	1.735
Mean of logged Data	3.724	SD of logged Data	2.369

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	601.8	95% Adjusted-CLT UCL (Chen-1995)	646.2
		95% Modified-t UCL (Johnson-1978)	610.4

Nonparametric Distribution Free UCLs

95% CLT UCL	590.9	95% Jackknife UCL	601.8
95% Standard Bootstrap UCL	586.2	95% Bootstrap-t UCL	709.1
95% Hall's Bootstrap UCL	612.5	95% Percentile Bootstrap UCL	607.4
95% BCA Bootstrap UCL	636.5		
90% Chebyshev(Mean, Sd) UCL	776.1	95% Chebyshev(Mean, Sd) UCL	961.8
97.5% Chebyshev(Mean, Sd) UCL	1220	99% Chebyshev(Mean, Sd) UCL	1726

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	18.9	Mean	2077
Maximum	10700	Median	127
SD	3510	Std. Error of Mean	765.9
Coefficient of Variation	1.69	Skewness	1.619
Mean of logged Data	5.547	SD of logged Data	2.266

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3398	95% Adjusted-CLT UCL (Chen-1995)	3626
		95% Modified-t UCL (Johnson-1978)	3443

Nonparametric Distribution Free UCLs

95% CLT UCL	3337	95% Jackknife UCL	3398
95% Standard Bootstrap UCL	3299	95% Bootstrap-t UCL	3888
95% Hall's Bootstrap UCL	3399	95% Percentile Bootstrap UCL	3332
95% BCA Bootstrap UCL	3553		
90% Chebyshev(Mean, Sd) UCL	4374	95% Chebyshev(Mean, Sd) UCL	5415
97.5% Chebyshev(Mean, Sd) UCL	6860	99% Chebyshev(Mean, Sd) UCL	9697

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	21.7	Mean	2477
Maximum	13200	Median	122
SD	4243	Std. Error of Mean	926
Coefficient of Variation	1.713	Skewness	1.652
Mean of logged Data	5.644	SD of logged Data	2.313

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4074	95% Adjusted-CLT UCL (Chen-1995)	4357
		95% Modified-t UCL (Johnson-1978)	4129

Nonparametric Distribution Free UCLs

95% CLT UCL	4000	95% Jackknife UCL	4074
95% Standard Bootstrap UCL	3967	95% Bootstrap-t UCL	4675
95% Hall's Bootstrap UCL	4098	95% Percentile Bootstrap UCL	4126
95% BCA Bootstrap UCL	4214		
90% Chebyshev(Mean, Sd) UCL	5255	95% Chebyshev(Mean, Sd) UCL	6513
97.5% Chebyshev(Mean, Sd) UCL	8259	99% Chebyshev(Mean, Sd) UCL	11690

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	8259

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	29.5	Mean	3350
Maximum	17900	Median	174
SD	5767	Std. Error of Mean	1258
Coefficient of Variation	1.722	Skewness	1.673

Mean of logged Data	5.959	SD of logged Data	2.294

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5520	95% Adjusted-CLT UCL (Chen-1995)	5911
		95% Modified-t UCL (Johnson-1978)	5597

Nonparametric Distribution Free UCLs

95% CLT UCL	5420	95% Jackknife UCL	5520
95% Standard Bootstrap UCL	5328	95% Bootstrap-t UCL	6199
95% Hall's Bootstrap UCL	5545	95% Percentile Bootstrap UCL	5502
95% BCA Bootstrap UCL	5719		
90% Chebyshev(Mean, Sd) UCL	7125	95% Chebyshev(Mean, Sd) UCL	8835
97.5% Chebyshev(Mean, Sd) UCL	11209	99% Chebyshev(Mean, Sd) UCL	15871

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	11209

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	15	Mean	1620
Maximum	8760	Median	79.9
SD	2802	Std. Error of Mean	611.4
Coefficient of Variation	1.73	Skewness	1.699
Mean of logged Data	5.239	SD of logged Data	2.291

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2674	95% Adjusted-CLT UCL (Chen-1995)	2868
		95% Modified-t UCL (Johnson-1978)	2712

Nonparametric Distribution Free UCLs

95% CLT UCL	2626	95% Jackknife UCL	2674
95% Standard Bootstrap UCL	2593	95% Bootstrap-t UCL	3262
95% Hall's Bootstrap UCL	2726	95% Percentile Bootstrap UCL	2691
95% BCA Bootstrap UCL	2878		
90% Chebyshev(Mean, Sd) UCL	3454	95% Chebyshev(Mean, Sd) UCL	4285
97.5% Chebyshev(Mean, Sd) UCL	5438	99% Chebyshev(Mean, Sd) UCL	7703

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	5438

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	10.8	Mean	1355
Maximum	7120	Median	66.6
SD	2329	Std. Error of Mean	508.3
Coefficient of Variation	1.719	Skewness	1.649
Mean of logged Data	5.004	SD of logged Data	2.331

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2232	95% Adjusted-CLT UCL (Chen-1995)	2387
		95% Modified-t UCL (Johnson-1978)	2262

Nonparametric Distribution Free UCLs

95% CLT UCL	2191	95% Jackknife UCL	2232
95% Standard Bootstrap UCL	2177	95% Bootstrap-t UCL	2643
95% Hall's Bootstrap UCL	2221	95% Percentile Bootstrap UCL	2147
95% BCA Bootstrap UCL	2458		
90% Chebyshev(Mean, Sd) UCL	2880	95% Chebyshev(Mean, Sd) UCL	3571
97.5% Chebyshev(Mean, Sd) UCL	4529	99% Chebyshev(Mean, Sd) UCL	6412

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	4529

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	23.3	Mean	2577
Maximum	13300	Median	147
SD	4355	Std. Error of Mean	950.4
Coefficient of Variation	1.69	Skewness	1.597
Mean of logged Data	5.739	SD of logged Data	2.272

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4216	95% Adjusted-CLT UCL (Chen-1995)	4494
		95% Modified-t UCL (Johnson-1978)	4271

Nonparametric Distribution Free UCLs

95% CLT UCL	4140	95% Jackknife UCL	4216
95% Standard Bootstrap UCL	4107	95% Bootstrap-t UCL	4951
95% Hall's Bootstrap UCL	4250	95% Percentile Bootstrap UCL	4240
95% BCA Bootstrap UCL	4560		
90% Chebyshev(Mean, Sd) UCL	5428	95% Chebyshev(Mean, Sd) UCL	6719

97.5% Chebyshev(Mean, Sd) UCL	8512	99% Chebyshev(Mean, Sd) UCL	12033

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	8512

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	4.22	Mean	425.9
Maximum	2340	Median	21.3
SD	736.9	Std. Error of Mean	160.8
Coefficient of Variation	1.73	Skewness	1.701
Mean of logged Data	3.903	SD of logged Data	2.288

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	703.3	95% Adjusted-CLT UCL (Chen-1995)	754.2
		95% Modified-t UCL (Johnson-1978)	713.2

Nonparametric Distribution Free UCLs

95% CLT UCL	690.4	95% Jackknife UCL	703.3
95% Standard Bootstrap UCL	693.6	95% Bootstrap-t UCL	835.7
95% Hall's Bootstrap UCL	710.6	95% Percentile Bootstrap UCL	689.8
95% BCA Bootstrap UCL	778		
90% Chebyshev(Mean, Sd) UCL	908.3	95% Chebyshev(Mean, Sd) UCL	1127
97.5% Chebyshev(Mean, Sd) UCL	1430	99% Chebyshev(Mean, Sd) UCL	2026

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	1430

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	32.1	Mean	3771
Maximum	19900	Median	232
SD	6476	Std. Error of Mean	1413
Coefficient of Variation	1.717	Skewness	1.692
Mean of logged Data	6.115	SD of logged Data	2.285

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6208	95% Adjusted-CLT UCL (Chen-1995)	6653
		95% Modified-t UCL (Johnson-1978)	6295

Nonparametric Distribution Free UCLs

95% CLT UCL	6095	95% Jackknife UCL	6208
95% Standard Bootstrap UCL	5992	95% Bootstrap-t UCL	7261
95% Hall's Bootstrap UCL	6309	95% Percentile Bootstrap UCL	6041
95% BCA Bootstrap UCL	6514		
90% Chebyshev(Mean, Sd) UCL	8010	95% Chebyshev(Mean, Sd) UCL	9931
97.5% Chebyshev(Mean, Sd) UCL	12596	99% Chebyshev(Mean, Sd) UCL	17831

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	12596

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	1.255	Mean	44.89
Maximum	216	Median	2.88
SD	72.5	Std. Error of Mean	15.82
Coefficient of Variation	1.615	Skewness	1.476
Mean of logged Data	2.017	SD of logged Data	2.034

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	72.18	95% Adjusted-CLT UCL (Chen-1995)	76.36
		95% Modified-t UCL (Johnson-1978)	73.03

Nonparametric Distribution Free UCLs

95% CLT UCL	70.91	95% Jackknife UCL	72.18
95% Standard Bootstrap UCL	70.41	95% Bootstrap-t UCL	83.68
95% Hall's Bootstrap UCL	68.99	95% Percentile Bootstrap UCL	70.99
95% BCA Bootstrap UCL	77.56		
90% Chebyshev(Mean, Sd) UCL	92.35	95% Chebyshev(Mean, Sd) UCL	113.8
97.5% Chebyshev(Mean, Sd) UCL	143.7	99% Chebyshev(Mean, Sd) UCL	202.3

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	143.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0

Minimum	18.9	Mean	1866
Maximum	9960	Median	93.6
SD	3242	Std. Error of Mean	707.6
Coefficient of Variation	1.738	Skewness	1.744
Mean of logged Data	5.396	SD of logged Data	2.281

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3086	95% Adjusted-CLT UCL (Chen-1995)	3317
		95% Modified-t UCL (Johnson-1978)	3131

Nonparametric Distribution Free UCLs

95% CLT UCL	3030	95% Jackknife UCL	3086
95% Standard Bootstrap UCL	3032	95% Bootstrap-t UCL	3520
95% Hall's Bootstrap UCL	3221	95% Percentile Bootstrap UCL	3009
95% BCA Bootstrap UCL	3402		
90% Chebyshev(Mean, Sd) UCL	3988	95% Chebyshev(Mean, Sd) UCL	4950
97.5% Chebyshev(Mean, Sd) UCL	6284	99% Chebyshev(Mean, Sd) UCL	8906

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	6284

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	1.12	Mean	100.2
Maximum	422	Median	6.33
SD	153.7	Std. Error of Mean	33.54
Coefficient of Variation	1.533	Skewness	1.163
Mean of logged Data	2.697	SD of logged Data	2.19

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	158.1	95% Adjusted-CLT UCL (Chen-1995)	164.5
		95% Modified-t UCL (Johnson-1978)	159.5

Nonparametric Distribution Free UCLs

95% CLT UCL	155.4	95% Jackknife UCL	158.1
95% Standard Bootstrap UCL	153.9	95% Bootstrap-t UCL	172.1
95% Hall's Bootstrap UCL	152.2	95% Percentile Bootstrap UCL	155.9
95% BCA Bootstrap UCL	164.8		
90% Chebyshev(Mean, Sd) UCL	200.8	95% Chebyshev(Mean, Sd) UCL	246.4
97.5% Chebyshev(Mean, Sd) UCL	309.7	99% Chebyshev(Mean, Sd) UCL	433.9

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	13	Mean	1753
Maximum	9750	Median	108
SD	3003	Std. Error of Mean	655.3
Coefficient of Variation	1.713	Skewness	1.717
Mean of logged Data	5.317	SD of logged Data	2.336

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2883	95% Adjusted-CLT UCL (Chen-1995)	3093
		95% Modified-t UCL (Johnson-1978)	2924

Nonparametric Distribution Free UCLs

95% CLT UCL	2831	95% Jackknife UCL	2883
95% Standard Bootstrap UCL	2805	95% Bootstrap-t UCL	3317
95% Hall's Bootstrap UCL	2961	95% Percentile Bootstrap UCL	2859
95% BCA Bootstrap UCL	3129		
90% Chebyshev(Mean, Sd) UCL	3719	95% Chebyshev(Mean, Sd) UCL	4609
97.5% Chebyshev(Mean, Sd) UCL	5845	99% Chebyshev(Mean, Sd) UCL	8273

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	5845

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	31.2	Mean	3655
Maximum	18900	Median	215
SD	6269	Std. Error of Mean	1368
Coefficient of Variation	1.715	Skewness	1.662
Mean of logged Data	6.065	SD of logged Data	2.293

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6015	95% Adjusted-CLT UCL (Chen-1995)	6436
		95% Modified-t UCL (Johnson-1978)	6097

Nonparametric Distribution Free UCLs

95% CLT UCL	5905	95% Jackknife UCL	6015

95% Standard Bootstrap UCL	5860	95% Bootstrap-t UCL	7202
95% Hall's Bootstrap UCL	6023	95% Percentile Bootstrap UCL	6054
95% BCA Bootstrap UCL	6545		
90% Chebyshev(Mean, Sd) UCL	7759	95% Chebyshev(Mean, Sd) UCL	9618
97.5% Chebyshev(Mean, Sd) UCL	12198	99% Chebyshev(Mean, Sd) UCL	17266

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	12198

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:35:26 PM
From File	Thompson N_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	6.88	Mean	10.32
Maximum	12.8	Median	11.3
SD	2.126	Std. Error of Mean	0.549
Coefficient of Variation	0.206	Skewness	-0.465
Mean of logged Data	2.312	SD of logged Data	0.22

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.28	95% Adjusted-CLT UCL (Chen-1995)	11.15
		95% Modified-t UCL (Johnson-1978)	11.27

Nonparametric Distribution Free UCLs

95% CLT UCL	11.22	95% Jackknife UCL	11.28
95% Standard Bootstrap UCL	11.22	95% Bootstrap-t UCL	11.27
95% Hall's Bootstrap UCL	11.1	95% Percentile Bootstrap UCL	11.19
95% BCA Bootstrap UCL	11.07		
90% Chebyshev(Mean, Sd) UCL	11.96	95% Chebyshev(Mean, Sd) UCL	12.71
97.5% Chebyshev(Mean, Sd) UCL	13.75	99% Chebyshev(Mean, Sd) UCL	15.78

Suggested UCL to Use

95% Student's-t UCL	11.28	or 95% Modified-t UCL	11.27

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	6.81	Mean	38.8
Maximum	184	Median	13.1
SD	52.57	Std. Error of Mean	13.57
Coefficient of Variation	1.355	Skewness	1.935
Mean of logged Data	2.974	SD of logged Data	1.131

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	62.7	95% Adjusted-CLT UCL (Chen-1995)	68.37
		95% Modified-t UCL (Johnson-1978)	63.83

Nonparametric Distribution Free UCLs

95% CLT UCL	61.12	95% Jackknife UCL	62.7
95% Standard Bootstrap UCL	60.38	95% Bootstrap-t UCL	81.16
95% Hall's Bootstrap UCL	67.2	95% Percentile Bootstrap UCL	61.75
95% BCA Bootstrap UCL	69.64		
90% Chebyshev(Mean, Sd) UCL	79.52	95% Chebyshev(Mean, Sd) UCL	97.96
97.5% Chebyshev(Mean, Sd) UCL	123.6	99% Chebyshev(Mean, Sd) UCL	173.9

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	27.7	Mean	39.09
Maximum	46.5	Median	43.3
SD	6.954	Std. Error of Mean	1.796
Coefficient of Variation	0.178	Skewness	-0.551
Mean of logged Data	3.65	SD of logged Data	0.189

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.25	95% Adjusted-CLT UCL (Chen-1995)	41.77
		95% Modified-t UCL (Johnson-1978)	42.21

Nonparametric Distribution Free UCLs

95% CLT UCL	42.04	95% Jackknife UCL	42.25
95% Standard Bootstrap UCL	41.99	95% Bootstrap-t UCL	41.95
95% Hall's Bootstrap UCL	41.63	95% Percentile Bootstrap UCL	41.91
95% BCA Bootstrap UCL	41.63		
90% Chebyshev(Mean, Sd) UCL	44.47	95% Chebyshev(Mean, Sd) UCL	46.91
97.5% Chebyshev(Mean, Sd) UCL	50.3	99% Chebyshev(Mean, Sd) UCL	56.95

Suggested UCL to Use

95% Student's-t UCL	42.25	or 95% Modified-t UCL	42.21

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	0.566	Mean	12.66
Maximum	63.4	Median	3.74
SD	17.78	Std. Error of Mean	4.591
Coefficient of Variation	1.405	Skewness	1.956
Mean of logged Data	1.493	SD of logged Data	1.592

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.74	95% Adjusted-CLT UCL (Chen-1995)	22.69
		95% Modified-t UCL (Johnson-1978)	21.13

Nonparametric Distribution Free UCLs

95% CLT UCL	20.21	95% Jackknife UCL	20.74
95% Standard Bootstrap UCL	20.05	95% Bootstrap-t UCL	25.71
95% Hall's Bootstrap UCL	28.57	95% Percentile Bootstrap UCL	20.31
95% BCA Bootstrap UCL	22.89		
90% Chebyshev(Mean, Sd) UCL	26.43	95% Chebyshev(Mean, Sd) UCL	32.67
97.5% Chebyshev(Mean, Sd) UCL	41.33	99% Chebyshev(Mean, Sd) UCL	58.34

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.388	Mean	42.22
Maximum	185	Median	1.11
SD	62.53	Std. Error of Mean	16.15
Coefficient of Variation	1.481	Skewness	1.301
Mean of logged Data	1.603	SD of logged Data	2.5

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	70.66	95% Adjusted-CLT UCL (Chen-1995)	74.57
		95% Modified-t UCL (Johnson-1978)	71.56

Nonparametric Distribution Free UCLs

95% CLT UCL	68.78	95% Jackknife UCL	70.66
95% Standard Bootstrap UCL	67.94	95% Bootstrap-t UCL	81.48
95% Hall's Bootstrap UCL	67.29	95% Percentile Bootstrap UCL	70.61
95% BCA Bootstrap UCL	73.14		
90% Chebyshev(Mean, Sd) UCL	90.66	95% Chebyshev(Mean, Sd) UCL	112.6
97.5% Chebyshev(Mean, Sd) UCL	143.1	99% Chebyshev(Mean, Sd) UCL	202.9

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	202.9

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.52	Mean	104.9
Maximum	436	Median	2.99
SD	143.7	Std. Error of Mean	37.09
Coefficient of Variation	1.369	Skewness	1.17
Mean of logged Data	2.774	SD of logged Data	2.377

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	170.3	95% Adjusted-CLT UCL (Chen-1995)	177.9
		95% Modified-t UCL (Johnson-1978)	172.1

Nonparametric Distribution Free UCLs

95% CLT UCL	166	95% Jackknife UCL	170.3
95% Standard Bootstrap UCL	164.3	95% Bootstrap-t UCL	186.9
95% Hall's Bootstrap UCL	168.9	95% Percentile Bootstrap UCL	167.9
95% BCA Bootstrap UCL	171.1		
90% Chebyshev(Mean, Sd) UCL	216.2	95% Chebyshev(Mean, Sd) UCL	266.6
97.5% Chebyshev(Mean, Sd) UCL	336.6	99% Chebyshev(Mean, Sd) UCL	474

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	474

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	10.3	Mean	863.4
Maximum	3400	Median	21.8
SD	1196	Std. Error of Mean	308.8
Coefficient of Variation	1.385	Skewness	1.097
Mean of logged Data	4.81	SD of logged Data	2.413

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1407	95% Adjusted-CLT UCL (Chen-1995)	1465
		95% Modified-t UCL (Johnson-1978)	1422

Nonparametric Distribution Free UCLs

95% CLT UCL	1371	95% Jackknife UCL	1407
95% Standard Bootstrap UCL	1349	95% Bootstrap-t UCL	1581
95% Hall's Bootstrap UCL	1350	95% Percentile Bootstrap UCL	1367
95% BCA Bootstrap UCL	1451		
90% Chebyshev(Mean, Sd) UCL	1790	95% Chebyshev(Mean, Sd) UCL	2209
97.5% Chebyshev(Mean, Sd) UCL	2792	99% Chebyshev(Mean, Sd) UCL	3936

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	3936

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	13.9	Mean	1062
Maximum	4400	Median	30.4
SD	1505	Std. Error of Mean	388.7
Coefficient of Variation	1.417	Skewness	1.192
Mean of logged Data	5.032	SD of logged Data	2.374

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1747	95% Adjusted-CLT UCL (Chen-1995)	1829
		95% Modified-t UCL (Johnson-1978)	1767

Nonparametric Distribution Free UCLs

95% CLT UCL	1701	95% Jackknife UCL	1747
95% Standard Bootstrap UCL	1689	95% Bootstrap-t UCL	1905
95% Hall's Bootstrap UCL	1711	95% Percentile Bootstrap UCL	1680
95% BCA Bootstrap UCL	1865		
90% Chebyshev(Mean, Sd) UCL	2228	95% Chebyshev(Mean, Sd) UCL	2756
97.5% Chebyshev(Mean, Sd) UCL	3489	99% Chebyshev(Mean, Sd) UCL	4929

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	4929

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	15.5	Mean	1405
Maximum	5650	Median	34.1
SD	1982	Std. Error of Mean	511.8
Coefficient of Variation	1.411	Skewness	1.155
Mean of logged Data	5.268	SD of logged Data	2.421

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2306	95% Adjusted-CLT UCL (Chen-1995)	2410
		95% Modified-t UCL (Johnson-1978)	2332

Nonparametric Distribution Free UCLs

95% CLT UCL	2247	95% Jackknife UCL	2306
95% Standard Bootstrap UCL	2209	95% Bootstrap-t UCL	2550
95% Hall's Bootstrap UCL	2187	95% Percentile Bootstrap UCL	2299
95% BCA Bootstrap UCL	2440		
90% Chebyshev(Mean, Sd) UCL	2940	95% Chebyshev(Mean, Sd) UCL	3636
97.5% Chebyshev(Mean, Sd) UCL	4601	99% Chebyshev(Mean, Sd) UCL	6497

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL 6497

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	8.54	Mean	715.6
Maximum	2970	Median	17.6
SD	1042	Std. Error of Mean	269.1
Coefficient of Variation	1.456	Skewness	1.28
Mean of logged Data	4.586	SD of logged Data	2.404

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1190	95% Adjusted-CLT UCL (Chen-1995)	1253
		95% Modified-t UCL (Johnson-1978)	1204

Nonparametric Distribution Free UCLs

95% CLT UCL	1158	95% Jackknife UCL	1190
95% Standard Bootstrap UCL	1129	95% Bootstrap-t UCL	1356

95% Hall's Bootstrap UCL	1153	95% Percentile Bootstrap UCL	1170
95% BCA Bootstrap UCL	1268		
90% Chebyshev(Mean, Sd) UCL	1523	95% Chebyshev(Mean, Sd) UCL	1888
97.5% Chebyshev(Mean, Sd) UCL	2396	99% Chebyshev(Mean, Sd) UCL	3393

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	3393

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	6.65	Mean	559.7
Maximum	2250	Median	14.5
SD	786.6	Std. Error of Mean	203.1
Coefficient of Variation	1.406	Skewness	1.144
Mean of logged Data	4.347	SD of logged Data	2.42

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	917.4	95% Adjusted-CLT UCL (Chen-1995)	957.9
		95% Modified-t UCL (Johnson-1978)	927.4

Nonparametric Distribution Free UCLs

95% CLT UCL	893.8	95% Jackknife UCL	917.4
95% Standard Bootstrap UCL	884.8	95% Bootstrap-t UCL	1033
95% Hall's Bootstrap UCL	886.6	95% Percentile Bootstrap UCL	908.1
95% BCA Bootstrap UCL	952.7		
90% Chebyshev(Mean, Sd) UCL	1169	95% Chebyshev(Mean, Sd) UCL	1445
97.5% Chebyshev(Mean, Sd) UCL	1828	99% Chebyshev(Mean, Sd) UCL	2581

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	2581

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	11.6	Mean	1075
Maximum	4420	Median	26.8
SD	1506	Std. Error of Mean	388.8

Coefficient of Variation	1.401	Skewness	1.163
Mean of logged Data	4.996	SD of logged Data	2.433

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1760	95% Adjusted-CLT UCL (Chen-1995)	1839
		95% Modified-t UCL (Johnson-1978)	1779

Nonparametric Distribution Free UCLs

95% CLT UCL	1714	95% Jackknife UCL	1760
95% Standard Bootstrap UCL	1693	95% Bootstrap-t UCL	2042
95% Hall's Bootstrap UCL	1724	95% Percentile Bootstrap UCL	1700
95% BCA Bootstrap UCL	1857		
90% Chebyshev(Mean, Sd) UCL	2241	95% Chebyshev(Mean, Sd) UCL	2769
97.5% Chebyshev(Mean, Sd) UCL	3503	99% Chebyshev(Mean, Sd) UCL	4943

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	4943

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.66	Mean	190.5
Maximum	793	Median	5.11
SD	278.2	Std. Error of Mean	71.83
Coefficient of Variation	1.46	Skewness	1.288
Mean of logged Data	3.277	SD of logged Data	2.386

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	317	95% Adjusted-CLT UCL (Chen-1995)	334.1
		95% Modified-t UCL (Johnson-1978)	321

Nonparametric Distribution Free UCLs

95% CLT UCL	308.6	95% Jackknife UCL	317
95% Standard Bootstrap UCL	304.8	95% Bootstrap-t UCL	386.8
95% Hall's Bootstrap UCL	310.8	95% Percentile Bootstrap UCL	311.2
95% BCA Bootstrap UCL	335.9		
90% Chebyshev(Mean, Sd) UCL	406	95% Chebyshev(Mean, Sd) UCL	503.6
97.5% Chebyshev(Mean, Sd) UCL	639	99% Chebyshev(Mean, Sd) UCL	905.1

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	905.1

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	17.6	Mean	1438
Maximum	5850	Median	34.5
SD	1974	Std. Error of Mean	509.7
Coefficient of Variation	1.373	Skewness	1.122
Mean of logged Data	5.333	SD of logged Data	2.421

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2335	95% Adjusted-CLT UCL (Chen-1995)	2434
		95% Modified-t UCL (Johnson-1978)	2360

Nonparametric Distribution Free UCLs

95% CLT UCL	2276	95% Jackknife UCL	2335
95% Standard Bootstrap UCL	2234	95% Bootstrap-t UCL	2582
95% Hall's Bootstrap UCL	2287	95% Percentile Bootstrap UCL	2268
95% BCA Bootstrap UCL	2357		
90% Chebyshev(Mean, Sd) UCL	2967	95% Chebyshev(Mean, Sd) UCL	3659
97.5% Chebyshev(Mean, Sd) UCL	4621	99% Chebyshev(Mean, Sd) UCL	6509

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL 6509

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	0.994	Mean	16.2
Maximum	69.1	Median	1.305
SD	21.94	Std. Error of Mean	5.665
Coefficient of Variation	1.355	Skewness	1.302
Mean of logged Data	1.552	SD of logged Data	1.718

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.17	95% Adjusted-CLT UCL (Chen-1995)	27.55
		95% Modified-t UCL (Johnson-1978)	26.49

Nonparametric Distribution Free UCLs

95% CLT UCL	25.51	95% Jackknife UCL	26.17
95% Standard Bootstrap UCL	25.12	95% Bootstrap-t UCL	29.44
95% Hall's Bootstrap UCL	26.3	95% Percentile Bootstrap UCL	25.53
95% BCA Bootstrap UCL	26.65		
90% Chebyshev(Mean, Sd) UCL	33.19	95% Chebyshev(Mean, Sd) UCL	40.89
97.5% Chebyshev(Mean, Sd) UCL	51.58	99% Chebyshev(Mean, Sd) UCL	72.56

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL 72.56

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	10.3	Mean	816.2
Maximum	3210	Median	22.7
SD	1169	Std. Error of Mean	301.9
Coefficient of Variation	1.432	Skewness	1.187
Mean of logged Data	4.755	SD of logged Data	2.376

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1348	95% Adjusted-CLT UCL (Chen-1995)	1412
		95% Modified-t UCL (Johnson-1978)	1363

Nonparametric Distribution Free UCLs

95% CLT UCL	1313	95% Jackknife UCL	1348
95% Standard Bootstrap UCL	1293	95% Bootstrap-t UCL	1533
95% Hall's Bootstrap UCL	1259	95% Percentile Bootstrap UCL	1317
95% BCA Bootstrap UCL	1398		
90% Chebyshev(Mean, Sd) UCL	1722	95% Chebyshev(Mean, Sd) UCL	2132
97.5% Chebyshev(Mean, Sd) UCL	2701	99% Chebyshev(Mean, Sd) UCL	3820

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL 3820

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14

		Number of Missing Observations	0
Minimum	0.732	Mean	42.93
Maximum	231	Median	15.8
SD	63.51	Std. Error of Mean	16.4
Coefficient of Variation	1.479	Skewness	2.156
Mean of logged Data	2.43	SD of logged Data	1.968

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.81	95% Adjusted-CLT UCL (Chen-1995)	79.66
		95% Modified-t UCL (Johnson-1978)	73.33

Nonparametric Distribution Free UCLs

95% CLT UCL	69.9	95% Jackknife UCL	71.81
95% Standard Bootstrap UCL	68.27	95% Bootstrap-t UCL	98.55
95% Hall's Bootstrap UCL	162.4	95% Percentile Bootstrap UCL	70.76
95% BCA Bootstrap UCL	76.34		
90% Chebyshev(Mean, Sd) UCL	92.12	95% Chebyshev(Mean, Sd) UCL	114.4
97.5% Chebyshev(Mean, Sd) UCL	145.3	99% Chebyshev(Mean, Sd) UCL	206.1

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	6.07	Mean	533.9
Maximum	2110	Median	12.9
SD	711.5	Std. Error of Mean	183.7
Coefficient of Variation	1.333	Skewness	1.033
Mean of logged Data	4.391	SD of logged Data	2.402

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	857.4	95% Adjusted-CLT UCL (Chen-1995)	888.4
		95% Modified-t UCL (Johnson-1978)	865.6

Nonparametric Distribution Free UCLs

95% CLT UCL	836	95% Jackknife UCL	857.4
95% Standard Bootstrap UCL	828	95% Bootstrap-t UCL	952.5
95% Hall's Bootstrap UCL	847	95% Percentile Bootstrap UCL	841.8
95% BCA Bootstrap UCL	851.2		
90% Chebyshev(Mean, Sd) UCL	1085	95% Chebyshev(Mean, Sd) UCL	1335
97.5% Chebyshev(Mean, Sd) UCL	1681	99% Chebyshev(Mean, Sd) UCL	2362

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	2362

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	15.4	Mean	1447
Maximum	6100	Median	34.4
SD	2021	Std. Error of Mean	521.9
Coefficient of Variation	1.397	Skewness	1.198
Mean of logged Data	5.289	SD of logged Data	2.452

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2366	95% Adjusted-CLT UCL (Chen-1995)	2478
		95% Modified-t UCL (Johnson-1978)	2393

Nonparametric Distribution Free UCLs

95% CLT UCL	2305	95% Jackknife UCL	2366
95% Standard Bootstrap UCL	2278	95% Bootstrap-t UCL	2623
95% Hall's Bootstrap UCL	2338	95% Percentile Bootstrap UCL	2276
95% BCA Bootstrap UCL	2516		
90% Chebyshev(Mean, Sd) UCL	3013	95% Chebyshev(Mean, Sd) UCL	3722
97.5% Chebyshev(Mean, Sd) UCL	4706	99% Chebyshev(Mean, Sd) UCL	6640

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	6640

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:36:36 PM
From File	Thompson O_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.73	Mean	11.75
Maximum	13.5	Median	11.7
SD	1.522	Std. Error of Mean	0.507
Coefficient of Variation	0.13	Skewness	-0.15
Mean of logged Data	2.456	SD of logged Data	0.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.69	95% Adjusted-CLT UCL (Chen-1995)	12.56
		95% Modified-t UCL (Johnson-1978)	12.69

Nonparametric Distribution Free UCLs

95% CLT UCL	12.58	95% Jackknife UCL	12.69
95% Standard Bootstrap UCL	12.54	95% Bootstrap-t UCL	12.67
95% Hall's Bootstrap UCL	12.46	95% Percentile Bootstrap UCL	12.54
95% BCA Bootstrap UCL	12.57		
90% Chebyshev(Mean, Sd) UCL	13.27	95% Chebyshev(Mean, Sd) UCL	13.96
97.5% Chebyshev(Mean, Sd) UCL	14.92	99% Chebyshev(Mean, Sd) UCL	16.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.49	Mean	28.61
Maximum	75.4	Median	18
SD	23.47	Std. Error of Mean	7.824
Coefficient of Variation	0.82	Skewness	1.201

Mean of logged Data	3.073	SD of logged Data	0.782

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.16	95% Adjusted-CLT UCL (Chen-1995)	44.83
		95% Modified-t UCL (Johnson-1978)	43.68

Nonparametric Distribution Free UCLs

95% CLT UCL	41.48	95% Jackknife UCL	43.16
95% Standard Bootstrap UCL	40.71	95% Bootstrap-t UCL	50.91
95% Hall's Bootstrap UCL	41.67	95% Percentile Bootstrap UCL	41.65
95% BCA Bootstrap UCL	43.51		
90% Chebyshev(Mean, Sd) UCL	52.08	95% Chebyshev(Mean, Sd) UCL	62.72
97.5% Chebyshev(Mean, Sd) UCL	77.47	99% Chebyshev(Mean, Sd) UCL	106.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	37.6	Mean	43.17
Maximum	48.3	Median	43.3
SD	4.147	Std. Error of Mean	1.382
Coefficient of Variation	0.0961	Skewness	-0.148
Mean of logged Data	3.761	SD of logged Data	0.097

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.74	95% Adjusted-CLT UCL (Chen-1995)	45.37
		95% Modified-t UCL (Johnson-1978)	45.73

Nonparametric Distribution Free UCLs

95% CLT UCL	45.44	95% Jackknife UCL	45.74
95% Standard Bootstrap UCL	45.31	95% Bootstrap-t UCL	45.79
95% Hall's Bootstrap UCL	45.14	95% Percentile Bootstrap UCL	45.38
95% BCA Bootstrap UCL	45.14		
90% Chebyshev(Mean, Sd) UCL	47.31	95% Chebyshev(Mean, Sd) UCL	49.19
97.5% Chebyshev(Mean, Sd) UCL	51.8	99% Chebyshev(Mean, Sd) UCL	56.92

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.2	Mean	7.03
Maximum	15.8	Median	4.29
SD	5.676	Std. Error of Mean	1.892
Coefficient of Variation	0.807	Skewness	0.935
Mean of logged Data	1.668	SD of logged Data	0.784

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.55	95% Adjusted-CLT UCL (Chen-1995)	10.77
		95% Modified-t UCL (Johnson-1978)	10.65

Nonparametric Distribution Free UCLs

95% CLT UCL	10.14	95% Jackknife UCL	10.55
95% Standard Bootstrap UCL	9.989	95% Bootstrap-t UCL	12.31
95% Hall's Bootstrap UCL	9.551	95% Percentile Bootstrap UCL	10.15
95% BCA Bootstrap UCL	10.43		
90% Chebyshev(Mean, Sd) UCL	12.71	95% Chebyshev(Mean, Sd) UCL	15.28
97.5% Chebyshev(Mean, Sd) UCL	18.84	99% Chebyshev(Mean, Sd) UCL	25.85

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.432	Mean	19.33
Maximum	51	Median	7.85
SD	21.78	Std. Error of Mean	7.26
Coefficient of Variation	1.127	Skewness	0.713
Mean of logged Data	1.8	SD of logged Data	2.004

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.83	95% Adjusted-CLT UCL (Chen-1995)	33.11
		95% Modified-t UCL (Johnson-1978)	33.12

Nonparametric Distribution Free UCLs

95% CLT UCL	31.27	95% Jackknife UCL	32.83
95% Standard Bootstrap UCL	30.54	95% Bootstrap-t UCL	35.48
95% Hall's Bootstrap UCL	28.09	95% Percentile Bootstrap UCL	30.17
95% BCA Bootstrap UCL	33.34		
90% Chebyshev(Mean, Sd) UCL	41.11	95% Chebyshev(Mean, Sd) UCL	50.97
97.5% Chebyshev(Mean, Sd) UCL	64.67	99% Chebyshev(Mean, Sd) UCL	91.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.13	Mean	71.05
Maximum	173	Median	31
SD	75.47	Std. Error of Mean	25.16
Coefficient of Variation	1.062	Skewness	0.5
Mean of logged Data	3.158	SD of logged Data	1.953

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	117.8	95% Adjusted-CLT UCL (Chen-1995)	116.9
		95% Modified-t UCL (Johnson-1978)	118.5

Nonparametric Distribution Free UCLs

95% CLT UCL	112.4	95% Jackknife UCL	117.8
95% Standard Bootstrap UCL	109.1	95% Bootstrap-t UCL	126.7
95% Hall's Bootstrap UCL	102.1	95% Percentile Bootstrap UCL	111
95% BCA Bootstrap UCL	113.4		
90% Chebyshev(Mean, Sd) UCL	146.5	95% Chebyshev(Mean, Sd) UCL	180.7
97.5% Chebyshev(Mean, Sd) UCL	228.1	99% Chebyshev(Mean, Sd) UCL	321.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.2	Mean	487.4
Maximum	1270	Median	244
SD	536.1	Std. Error of Mean	178.7
Coefficient of Variation	1.1	Skewness	0.677
Mean of logged Data	4.78	SD of logged Data	2.427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	819.7	95% Adjusted-CLT UCL (Chen-1995)	824.4
		95% Modified-t UCL (Johnson-1978)	826.4

Nonparametric Distribution Free UCLs

95% CLT UCL	781.3	95% Jackknife UCL	819.7
95% Standard Bootstrap UCL	767.3	95% Bootstrap-t UCL	868.1
95% Hall's Bootstrap UCL	702.8	95% Percentile Bootstrap UCL	758.9
95% BCA Bootstrap UCL	795		
90% Chebyshev(Mean, Sd) UCL	1023	95% Chebyshev(Mean, Sd) UCL	1266
97.5% Chebyshev(Mean, Sd) UCL	1603	99% Chebyshev(Mean, Sd) UCL	2265

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.8	Mean	598
Maximum	1530	Median	290
SD	657.8	Std. Error of Mean	219.3
Coefficient of Variation	1.1	Skewness	0.685
Mean of logged Data	4.975	SD of logged Data	2.446

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1006	95% Adjusted-CLT UCL (Chen-1995)	1012
		95% Modified-t UCL (Johnson-1978)	1014

Nonparametric Distribution Free UCLs

95% CLT UCL	958.7	95% Jackknife UCL	1006
95% Standard Bootstrap UCL	938.1	95% Bootstrap-t UCL	1072
95% Hall's Bootstrap UCL	865.4	95% Percentile Bootstrap UCL	955.2
95% BCA Bootstrap UCL	983.5		
90% Chebyshev(Mean, Sd) UCL	1256	95% Chebyshev(Mean, Sd) UCL	1554
97.5% Chebyshev(Mean, Sd) UCL	1967	99% Chebyshev(Mean, Sd) UCL	2780

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.88	Mean	806.5
Maximum	2060	Median	375
SD	892.5	Std. Error of Mean	297.5
Coefficient of Variation	1.107	Skewness	0.686
Mean of logged Data	5.253	SD of logged Data	2.466

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1360	95% Adjusted-CLT UCL (Chen-1995)	1368
		95% Modified-t UCL (Johnson-1978)	1371

Nonparametric Distribution Free UCLs

95% CLT UCL	1296	95% Jackknife UCL	1360
95% Standard Bootstrap UCL	1261	95% Bootstrap-t UCL	1456
95% Hall's Bootstrap UCL	1151	95% Percentile Bootstrap UCL	1288
95% BCA Bootstrap UCL	1337		
90% Chebyshev(Mean, Sd) UCL	1699	95% Chebyshev(Mean, Sd) UCL	2103
97.5% Chebyshev(Mean, Sd) UCL	2664	99% Chebyshev(Mean, Sd) UCL	3767

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.79	Mean	402.9
Maximum	1010	Median	186
SD	447.7	Std. Error of Mean	149.2
Coefficient of Variation	1.111	Skewness	0.687
Mean of logged Data	4.558	SD of logged Data	2.457

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	680.4	95% Adjusted-CLT UCL (Chen-1995)	684.9
		95% Modified-t UCL (Johnson-1978)	686.1

Nonparametric Distribution Free UCLs

95% CLT UCL	648.4	95% Jackknife UCL	680.4
95% Standard Bootstrap UCL	634.5	95% Bootstrap-t UCL	732.2
95% Hall's Bootstrap UCL	573.3	95% Percentile Bootstrap UCL	637.2
95% BCA Bootstrap UCL	669.3		
90% Chebyshev(Mean, Sd) UCL	850.6	95% Chebyshev(Mean, Sd) UCL	1053
97.5% Chebyshev(Mean, Sd) UCL	1335	99% Chebyshev(Mean, Sd) UCL	1888

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.44	Mean	330.3
Maximum	874	Median	134
SD	378.4	Std. Error of Mean	126.1
Coefficient of Variation	1.146	Skewness	0.733
Mean of logged Data	4.338	SD of logged Data	2.442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	564.9	95% Adjusted-CLT UCL (Chen-1995)	570.7
		95% Modified-t UCL (Johnson-1978)	570

Nonparametric Distribution Free UCLs

95% CLT UCL	537.8	95% Jackknife UCL	564.9
95% Standard Bootstrap UCL	529.1	95% Bootstrap-t UCL	601.5
95% Hall's Bootstrap UCL	473	95% Percentile Bootstrap UCL	535.5
95% BCA Bootstrap UCL	544		
90% Chebyshev(Mean, Sd) UCL	708.7	95% Chebyshev(Mean, Sd) UCL	880.1
97.5% Chebyshev(Mean, Sd) UCL	1118	99% Chebyshev(Mean, Sd) UCL	1585

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.69	Mean	605.8
Maximum	1600	Median	249
SD	688.5	Std. Error of Mean	229.5
Coefficient of Variation	1.136	Skewness	0.713
Mean of logged Data	4.935	SD of logged Data	2.468

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1033	95% Adjusted-CLT UCL (Chen-1995)	1042
		95% Modified-t UCL (Johnson-1978)	1042

Nonparametric Distribution Free UCLs

95% CLT UCL	983.3	95% Jackknife UCL	1033
95% Standard Bootstrap UCL	967.8	95% Bootstrap-t UCL	1093
95% Hall's Bootstrap UCL	865.9	95% Percentile Bootstrap UCL	950.4
95% BCA Bootstrap UCL	1040		
90% Chebyshev(Mean, Sd) UCL	1294	95% Chebyshev(Mean, Sd) UCL	1606
97.5% Chebyshev(Mean, Sd) UCL	2039	99% Chebyshev(Mean, Sd) UCL	2889

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.28	Mean	111.9
Maximum	285	Median	53.3
SD	121.4	Std. Error of Mean	40.48
Coefficient of Variation	1.085	Skewness	0.697
Mean of logged Data	3.637	SD of logged Data	1.946

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	187.2	95% Adjusted-CLT UCL (Chen-1995)	188.6
		95% Modified-t UCL (Johnson-1978)	188.8

Nonparametric Distribution Free UCLs

95% CLT UCL	178.5	95% Jackknife UCL	187.2
95% Standard Bootstrap UCL	171.7	95% Bootstrap-t UCL	202.8
95% Hall's Bootstrap UCL	160.2	95% Percentile Bootstrap UCL	174.6
95% BCA Bootstrap UCL	186		
90% Chebyshev(Mean, Sd) UCL	233.4	95% Chebyshev(Mean, Sd) UCL	288.4
97.5% Chebyshev(Mean, Sd) UCL	364.7	99% Chebyshev(Mean, Sd) UCL	514.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.95	Mean	847.4
Maximum	2200	Median	410
SD	929.8	Std. Error of Mean	309.9
Coefficient of Variation	1.097	Skewness	0.616
Mean of logged Data	5.23	SD of logged Data	2.556

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1424	95% Adjusted-CLT UCL (Chen-1995)	1425
		95% Modified-t UCL (Johnson-1978)	1434

Nonparametric Distribution Free UCLs

95% CLT UCL	1357	95% Jackknife UCL	1424
95% Standard Bootstrap UCL	1329	95% Bootstrap-t UCL	1514
95% Hall's Bootstrap UCL	1242	95% Percentile Bootstrap UCL	1333
95% BCA Bootstrap UCL	1439		
90% Chebyshev(Mean, Sd) UCL	1777	95% Chebyshev(Mean, Sd) UCL	2198
97.5% Chebyshev(Mean, Sd) UCL	2783	99% Chebyshev(Mean, Sd) UCL	3931

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.31	Mean	9.226
Maximum	20.1	Median	2.75
SD	8.866	Std. Error of Mean	2.955
Coefficient of Variation	0.961	Skewness	0.287
Mean of logged Data	1.59	SD of logged Data	1.284

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.72	95% Adjusted-CLT UCL (Chen-1995)	14.39
		95% Modified-t UCL (Johnson-1978)	14.77

Nonparametric Distribution Free UCLs

95% CLT UCL	14.09	95% Jackknife UCL	14.72
95% Standard Bootstrap UCL	13.78	95% Bootstrap-t UCL	14.49
95% Hall's Bootstrap UCL	12.59	95% Percentile Bootstrap UCL	14.36
95% BCA Bootstrap UCL	14.3		
90% Chebyshev(Mean, Sd) UCL	18.09	95% Chebyshev(Mean, Sd) UCL	22.11
97.5% Chebyshev(Mean, Sd) UCL	27.68	99% Chebyshev(Mean, Sd) UCL	38.63

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	3.55	Mean	465.9
Maximum	1160	Median	246
SD	505.4	Std. Error of Mean	168.5
Coefficient of Variation	1.085	Skewness	0.663
Mean of logged Data	4.771	SD of logged Data	2.396

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	779.2	95% Adjusted-CLT UCL (Chen-1995)	782.8
		95% Modified-t UCL (Johnson-1978)	785.4

Nonparametric Distribution Free UCLs

95% CLT UCL	743	95% Jackknife UCL	779.2
95% Standard Bootstrap UCL	726.2	95% Bootstrap-t UCL	810.9
95% Hall's Bootstrap UCL	664.6	95% Percentile Bootstrap UCL	726.9
95% BCA Bootstrap UCL	779.1		
90% Chebyshev(Mean, Sd) UCL	971.3	95% Chebyshev(Mean, Sd) UCL	1200
97.5% Chebyshev(Mean, Sd) UCL	1518	99% Chebyshev(Mean, Sd) UCL	2142

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	5.66	Mean	19.81
Maximum	51.2	Median	11.2
SD	17.39	Std. Error of Mean	5.796
Coefficient of Variation	0.878	Skewness	1.038
Mean of logged Data	2.656	SD of logged Data	0.845

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.59	95% Adjusted-CLT UCL (Chen-1995)	31.49
		95% Modified-t UCL (Johnson-1978)	30.93

Nonparametric Distribution Free UCLs

95% CLT UCL	29.35	95% Jackknife UCL	30.59
95% Standard Bootstrap UCL	28.7	95% Bootstrap-t UCL	35.82

95% Hall's Bootstrap UCL	27.31	95% Percentile Bootstrap UCL	29.41
95% BCA Bootstrap UCL	30.05		
90% Chebyshev(Mean, Sd) UCL	37.2	95% Chebyshev(Mean, Sd) UCL	45.08
97.5% Chebyshev(Mean, Sd) UCL	56.01	99% Chebyshev(Mean, Sd) UCL	77.48

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.295	Mean	354.8
Maximum	913	Median	152
SD	389.6	Std. Error of Mean	129.9
Coefficient of Variation	1.098	Skewness	0.558
Mean of logged Data	4.42	SD of logged Data	2.427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	596.3	95% Adjusted-CLT UCL (Chen-1995)	594.3
		95% Modified-t UCL (Johnson-1978)	600.3

Nonparametric Distribution Free UCLs

95% CLT UCL	568.4	95% Jackknife UCL	596.3
95% Standard Bootstrap UCL	554.3	95% Bootstrap-t UCL	657.1
95% Hall's Bootstrap UCL	519	95% Percentile Bootstrap UCL	571.3
95% BCA Bootstrap UCL	575.3		
90% Chebyshev(Mean, Sd) UCL	744.4	95% Chebyshev(Mean, Sd) UCL	920.9
97.5% Chebyshev(Mean, Sd) UCL	1166	99% Chebyshev(Mean, Sd) UCL	1647

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.06	Mean	821
Maximum	2140	Median	388
SD	912.6	Std. Error of Mean	304.2

Coefficient of Variation	1.112	Skewness	0.659
Mean of logged Data	5.21	SD of logged Data	2.529

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1387	95% Adjusted-CLT UCL (Chen-1995)	1393
		95% Modified-t UCL (Johnson-1978)	1398

Nonparametric Distribution Free UCLs

95% CLT UCL	1321	95% Jackknife UCL	1387
95% Standard Bootstrap UCL	1304	95% Bootstrap-t UCL	1482
95% Hall's Bootstrap UCL	1177	95% Percentile Bootstrap UCL	1299
95% BCA Bootstrap UCL	1358		
90% Chebyshev(Mean, Sd) UCL	1734	95% Chebyshev(Mean, Sd) UCL	2147
97.5% Chebyshev(Mean, Sd) UCL	2721	99% Chebyshev(Mean, Sd) UCL	3848

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:37:48 PM
From File	Thompson P_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.02	Mean	11.8
Maximum	13.4	Median	12.2
SD	1.415	Std. Error of Mean	0.472
Coefficient of Variation	0.12	Skewness	-0.933
Mean of logged Data	2.461	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.68	95% Adjusted-CLT UCL (Chen-1995)	12.42
		95% Modified-t UCL (Johnson-1978)	12.66

Nonparametric Distribution Free UCLs

95% CLT UCL	12.58	95% Jackknife UCL	12.68
95% Standard Bootstrap UCL	12.54	95% Bootstrap-t UCL	12.5
95% Hall's Bootstrap UCL	12.44	95% Percentile Bootstrap UCL	12.5
95% BCA Bootstrap UCL	12.42		
90% Chebyshev(Mean, Sd) UCL	13.22	95% Chebyshev(Mean, Sd) UCL	13.86
97.5% Chebyshev(Mean, Sd) UCL	14.75	99% Chebyshev(Mean, Sd) UCL	16.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.67	Mean	60.89
Maximum	173	Median	52.3
SD	55.7	Std. Error of Mean	18.57
Coefficient of Variation	0.915	Skewness	0.986

Mean of logged Data	3.627	SD of logged Data	1.123

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	95.41	95% Adjusted-CLT UCL (Chen-1995)	97.95
		95% Modified-t UCL (Johnson-1978)	96.43

Nonparametric Distribution Free UCLs

95% CLT UCL	91.43	95% Jackknife UCL	95.41
95% Standard Bootstrap UCL	88.98	95% Bootstrap-t UCL	106
95% Hall's Bootstrap UCL	98.9	95% Percentile Bootstrap UCL	91.59
95% BCA Bootstrap UCL	97.68		
90% Chebyshev(Mean, Sd) UCL	116.6	95% Chebyshev(Mean, Sd) UCL	141.8
97.5% Chebyshev(Mean, Sd) UCL	176.8	99% Chebyshev(Mean, Sd) UCL	245.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	39.7	Mean	44.67
Maximum	49.2	Median	45.4
SD	3.201	Std. Error of Mean	1.067
Coefficient of Variation	0.0717	Skewness	-0.338
Mean of logged Data	3.797	SD of logged Data	0.0726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.65	95% Adjusted-CLT UCL (Chen-1995)	46.29
		95% Modified-t UCL (Johnson-1978)	46.63

Nonparametric Distribution Free UCLs

95% CLT UCL	46.42	95% Jackknife UCL	46.65
95% Standard Bootstrap UCL	46.33	95% Bootstrap-t UCL	46.58
95% Hall's Bootstrap UCL	46.34	95% Percentile Bootstrap UCL	46.3
95% BCA Bootstrap UCL	46.22		
90% Chebyshev(Mean, Sd) UCL	47.87	95% Chebyshev(Mean, Sd) UCL	49.32
97.5% Chebyshev(Mean, Sd) UCL	51.33	99% Chebyshev(Mean, Sd) UCL	55.28

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.16	Mean	8.068
Maximum	36.5	Median	4.31
SD	10.9	Std. Error of Mean	3.633
Coefficient of Variation	1.351	Skewness	2.762
Mean of logged Data	1.626	SD of logged Data	0.898

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.82	95% Adjusted-CLT UCL (Chen-1995)	17.62
		95% Modified-t UCL (Johnson-1978)	15.38

Nonparametric Distribution Free UCLs

95% CLT UCL	14.04	95% Jackknife UCL	14.82
95% Standard Bootstrap UCL	13.66	95% Bootstrap-t UCL	33.13
95% Hall's Bootstrap UCL	35.65	95% Percentile Bootstrap UCL	15.04
95% BCA Bootstrap UCL	19.01		
90% Chebyshev(Mean, Sd) UCL	18.97	95% Chebyshev(Mean, Sd) UCL	23.9
97.5% Chebyshev(Mean, Sd) UCL	30.75	99% Chebyshev(Mean, Sd) UCL	44.21

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.322	Mean	15.89
Maximum	73.7	Median	8.39
SD	23.21	Std. Error of Mean	7.736
Coefficient of Variation	1.46	Skewness	2.33
Mean of logged Data	1.597	SD of logged Data	1.926

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.28	95% Adjusted-CLT UCL (Chen-1995)	35.04
		95% Modified-t UCL (Johnson-1978)	31.28

Nonparametric Distribution Free UCLs

95% CLT UCL	28.62	95% Jackknife UCL	30.28
95% Standard Bootstrap UCL	28.23	95% Bootstrap-t UCL	51.48
95% Hall's Bootstrap UCL	76.65	95% Percentile Bootstrap UCL	29.92
95% BCA Bootstrap UCL	35.59		
90% Chebyshev(Mean, Sd) UCL	39.1	95% Chebyshev(Mean, Sd) UCL	49.61
97.5% Chebyshev(Mean, Sd) UCL	64.2	99% Chebyshev(Mean, Sd) UCL	92.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.58	Mean	39.96
Maximum	143	Median	21.7
SD	47.99	Std. Error of Mean	16
Coefficient of Variation	1.201	Skewness	1.488
Mean of logged Data	2.748	SD of logged Data	1.701

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	69.71	95% Adjusted-CLT UCL (Chen-1995)	74.75
		95% Modified-t UCL (Johnson-1978)	71.03

Nonparametric Distribution Free UCLs

95% CLT UCL	66.27	95% Jackknife UCL	69.71
95% Standard Bootstrap UCL	65.16	95% Bootstrap-t UCL	99.58
95% Hall's Bootstrap UCL	158	95% Percentile Bootstrap UCL	66.68
95% BCA Bootstrap UCL	71.6		
90% Chebyshev(Mean, Sd) UCL	87.95	95% Chebyshev(Mean, Sd) UCL	109.7
97.5% Chebyshev(Mean, Sd) UCL	139.9	99% Chebyshev(Mean, Sd) UCL	199.1

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.37	Mean	279.4
Maximum	956	Median	192
SD	314.4	Std. Error of Mean	104.8
Coefficient of Variation	1.125	Skewness	1.367
Mean of logged Data	4.425	SD of logged Data	2.181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	474.2	95% Adjusted-CLT UCL (Chen-1995)	502.8
		95% Modified-t UCL (Johnson-1978)	482.2

Nonparametric Distribution Free UCLs

95% CLT UCL	451.7	95% Jackknife UCL	474.2
95% Standard Bootstrap UCL	440.1	95% Bootstrap-t UCL	583.3
95% Hall's Bootstrap UCL	690.6	95% Percentile Bootstrap UCL	448.2
95% BCA Bootstrap UCL	477.1		
90% Chebyshev(Mean, Sd) UCL	593.7	95% Chebyshev(Mean, Sd) UCL	736.2
97.5% Chebyshev(Mean, Sd) UCL	933.8	99% Chebyshev(Mean, Sd) UCL	1322

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.52	Mean	355.8
Maximum	1220	Median	233
SD	401.8	Std. Error of Mean	133.9
Coefficient of Variation	1.129	Skewness	1.364
Mean of logged Data	4.609	SD of logged Data	2.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	604.9	95% Adjusted-CLT UCL (Chen-1995)	641.2
		95% Modified-t UCL (Johnson-1978)	615

Nonparametric Distribution Free UCLs

95% CLT UCL	576.1	95% Jackknife UCL	604.9
95% Standard Bootstrap UCL	565	95% Bootstrap-t UCL	762.6
95% Hall's Bootstrap UCL	925.7	95% Percentile Bootstrap UCL	571.6
95% BCA Bootstrap UCL	630.7		
90% Chebyshev(Mean, Sd) UCL	757.6	95% Chebyshev(Mean, Sd) UCL	939.6
97.5% Chebyshev(Mean, Sd) UCL	1192	99% Chebyshev(Mean, Sd) UCL	1688

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.39	Mean	464.3
Maximum	1560	Median	318
SD	518.7	Std. Error of Mean	172.9
Coefficient of Variation	1.117	Skewness	1.284
Mean of logged Data	4.873	SD of logged Data	2.27

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	785.9	95% Adjusted-CLT UCL (Chen-1995)	827.8
		95% Modified-t UCL (Johnson-1978)	798.2

Nonparametric Distribution Free UCLs

95% CLT UCL	748.7	95% Jackknife UCL	785.9
95% Standard Bootstrap UCL	738.8	95% Bootstrap-t UCL	910.3
95% Hall's Bootstrap UCL	1015	95% Percentile Bootstrap UCL	747.4
95% BCA Bootstrap UCL	831.7		
90% Chebyshev(Mean, Sd) UCL	983	95% Chebyshev(Mean, Sd) UCL	1218
97.5% Chebyshev(Mean, Sd) UCL	1544	99% Chebyshev(Mean, Sd) UCL	2185

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	221.8
Maximum	729	Median	141
SD	247.6	Std. Error of Mean	82.52
Coefficient of Variation	1.116	Skewness	1.182
Mean of logged Data	4.161	SD of logged Data	2.218

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	375.3	95% Adjusted-CLT UCL (Chen-1995)	392.3
		95% Modified-t UCL (Johnson-1978)	380.7

Nonparametric Distribution Free UCLs

95% CLT UCL	357.6	95% Jackknife UCL	375.3
95% Standard Bootstrap UCL	353.3	95% Bootstrap-t UCL	451.1
95% Hall's Bootstrap UCL	419.8	95% Percentile Bootstrap UCL	361.6
95% BCA Bootstrap UCL	375.3		
90% Chebyshev(Mean, Sd) UCL	469.4	95% Chebyshev(Mean, Sd) UCL	581.5
97.5% Chebyshev(Mean, Sd) UCL	737.2	99% Chebyshev(Mean, Sd) UCL	1043

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.41	Mean	178.3
Maximum	646	Median	106
SD	213.9	Std. Error of Mean	71.3
Coefficient of Variation	1.2	Skewness	1.509
Mean of logged Data	3.935	SD of logged Data	2.187

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	310.9	95% Adjusted-CLT UCL (Chen-1995)	333.9
		95% Modified-t UCL (Johnson-1978)	316.8

Nonparametric Distribution Free UCLs

95% CLT UCL	295.6	95% Jackknife UCL	310.9
95% Standard Bootstrap UCL	290.4	95% Bootstrap-t UCL	425.7
95% Hall's Bootstrap UCL	704.1	95% Percentile Bootstrap UCL	291.7
95% BCA Bootstrap UCL	325		
90% Chebyshev(Mean, Sd) UCL	392.2	95% Chebyshev(Mean, Sd) UCL	489.1
97.5% Chebyshev(Mean, Sd) UCL	623.5	99% Chebyshev(Mean, Sd) UCL	887.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.38	Mean	362.4
Maximum	1310	Median	225
SD	431.7	Std. Error of Mean	143.9
Coefficient of Variation	1.191	Skewness	1.496
Mean of logged Data	4.574	SD of logged Data	2.293

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	629.9	95% Adjusted-CLT UCL (Chen-1995)	675.7
		95% Modified-t UCL (Johnson-1978)	641.9

Nonparametric Distribution Free UCLs

95% CLT UCL	599.1	95% Jackknife UCL	629.9
95% Standard Bootstrap UCL	586.1	95% Bootstrap-t UCL	795.7
95% Hall's Bootstrap UCL	747.8	95% Percentile Bootstrap UCL	598.2
95% BCA Bootstrap UCL	663.7		
90% Chebyshev(Mean, Sd) UCL	794	95% Chebyshev(Mean, Sd) UCL	989.6
97.5% Chebyshev(Mean, Sd) UCL	1261	99% Chebyshev(Mean, Sd) UCL	1794

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.25	Mean	62.77
Maximum	200	Median	44.5
SD	65.64	Std. Error of Mean	21.88
Coefficient of Variation	1.046	Skewness	1.212
Mean of logged Data	3.312	SD of logged Data	1.645

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	103.5	95% Adjusted-CLT UCL (Chen-1995)	108.2
		95% Modified-t UCL (Johnson-1978)	104.9

Nonparametric Distribution Free UCLs

95% CLT UCL	98.76	95% Jackknife UCL	103.5
95% Standard Bootstrap UCL	97.48	95% Bootstrap-t UCL	122.9
95% Hall's Bootstrap UCL	123.7	95% Percentile Bootstrap UCL	96.74
95% BCA Bootstrap UCL	102.5		
90% Chebyshev(Mean, Sd) UCL	128.4	95% Chebyshev(Mean, Sd) UCL	158.1
97.5% Chebyshev(Mean, Sd) UCL	199.4	99% Chebyshev(Mean, Sd) UCL	280.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	6.73	Mean	466.6
Maximum	1600	Median	266
SD	545.7	Std. Error of Mean	181.9
Coefficient of Variation	1.169	Skewness	1.301
Mean of logged Data	4.844	SD of logged Data	2.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	804.9	95% Adjusted-CLT UCL (Chen-1995)	850.1
		95% Modified-t UCL (Johnson-1978)	818

Nonparametric Distribution Free UCLs

95% CLT UCL	765.8	95% Jackknife UCL	804.9
95% Standard Bootstrap UCL	743.9	95% Bootstrap-t UCL	1037
95% Hall's Bootstrap UCL	1018	95% Percentile Bootstrap UCL	787.2
95% BCA Bootstrap UCL	825.2		
90% Chebyshev(Mean, Sd) UCL	1012	95% Chebyshev(Mean, Sd) UCL	1260
97.5% Chebyshev(Mean, Sd) UCL	1603	99% Chebyshev(Mean, Sd) UCL	2277

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.3	Mean	6.273
Maximum	26.9	Median	3.2
SD	8.271	Std. Error of Mean	2.757
Coefficient of Variation	1.319	Skewness	2.372
Mean of logged Data	1.28	SD of logged Data	1.049

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.4	95% Adjusted-CLT UCL (Chen-1995)	13.14
		95% Modified-t UCL (Johnson-1978)	11.76

Nonparametric Distribution Free UCLs

95% CLT UCL	10.81	95% Jackknife UCL	11.4
95% Standard Bootstrap UCL	10.55	95% Bootstrap-t UCL	23.55
95% Hall's Bootstrap UCL	28.38	95% Percentile Bootstrap UCL	10.92
95% BCA Bootstrap UCL	13.35		
90% Chebyshev(Mean, Sd) UCL	14.54	95% Chebyshev(Mean, Sd) UCL	18.29
97.5% Chebyshev(Mean, Sd) UCL	23.49	99% Chebyshev(Mean, Sd) UCL	33.7

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	4.16	Mean	266
Maximum	856	Median	186
SD	285.9	Std. Error of Mean	95.29
Coefficient of Variation	1.075	Skewness	1.156
Mean of logged Data	4.404	SD of logged Data	2.168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	443.2	95% Adjusted-CLT UCL (Chen-1995)	462
		95% Modified-t UCL (Johnson-1978)	449.3

Nonparametric Distribution Free UCLs

95% CLT UCL	422.8	95% Jackknife UCL	443.2
95% Standard Bootstrap UCL	413.9	95% Bootstrap-t UCL	511.5
95% Hall's Bootstrap UCL	501.3	95% Percentile Bootstrap UCL	416.4
95% BCA Bootstrap UCL	462.2		
90% Chebyshev(Mean, Sd) UCL	551.9	95% Chebyshev(Mean, Sd) UCL	681.4
97.5% Chebyshev(Mean, Sd) UCL	861.1	99% Chebyshev(Mean, Sd) UCL	1214

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.97	Mean	24.26
Maximum	120	Median	14.9
SD	36.45	Std. Error of Mean	12.15
Coefficient of Variation	1.503	Skewness	2.83
Mean of logged Data	2.623	SD of logged Data	0.999

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.85	95% Adjusted-CLT UCL (Chen-1995)	56.49
		95% Modified-t UCL (Johnson-1978)	48.76

Nonparametric Distribution Free UCLs

95% CLT UCL	44.24	95% Jackknife UCL	46.85
95% Standard Bootstrap UCL	42.75	95% Bootstrap-t UCL	118.5

95% Hall's Bootstrap UCL	132	95% Percentile Bootstrap UCL	47.57
95% BCA Bootstrap UCL	59.61		
90% Chebyshev(Mean, Sd) UCL	60.71	95% Chebyshev(Mean, Sd) UCL	77.22
97.5% Chebyshev(Mean, Sd) UCL	100.1	99% Chebyshev(Mean, Sd) UCL	145.1

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.23	Mean	193.5
Maximum	734	Median	103
SD	243.6	Std. Error of Mean	81.21
Coefficient of Variation	1.259	Skewness	1.619
Mean of logged Data	3.991	SD of logged Data	2.166

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	344.5	95% Adjusted-CLT UCL (Chen-1995)	373.9
		95% Modified-t UCL (Johnson-1978)	351.8

Nonparametric Distribution Free UCLs

95% CLT UCL	327	95% Jackknife UCL	344.5
95% Standard Bootstrap UCL	319.1	95% Bootstrap-t UCL	516.8
95% Hall's Bootstrap UCL	900.5	95% Percentile Bootstrap UCL	326
95% BCA Bootstrap UCL	364		
90% Chebyshev(Mean, Sd) UCL	437.1	95% Chebyshev(Mean, Sd) UCL	547.5
97.5% Chebyshev(Mean, Sd) UCL	700.6	99% Chebyshev(Mean, Sd) UCL	1002

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6	Mean	482.6
Maximum	1720	Median	293
SD	575.1	Std. Error of Mean	191.7

Coefficient of Variation	1.192	Skewness	1.434
Mean of logged Data	4.849	SD of logged Data	2.3

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	839	95% Adjusted-CLT UCL (Chen-1995)	895.8
		95% Modified-t UCL (Johnson-1978)	854.3

Nonparametric Distribution Free UCLs

95% CLT UCL	797.9	95% Jackknife UCL	839
95% Standard Bootstrap UCL	779.8	95% Bootstrap-t UCL	1079
95% Hall's Bootstrap UCL	1213	95% Percentile Bootstrap UCL	785.8
95% BCA Bootstrap UCL	859.4		
90% Chebyshev(Mean, Sd) UCL	1058	95% Chebyshev(Mean, Sd) UCL	1318
97.5% Chebyshev(Mean, Sd) UCL	1680	99% Chebyshev(Mean, Sd) UCL	2390

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/23/2021 2:38:54 PM
From File	Thompson Q_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.6	Mean	13.2
Maximum	14.5	Median	13.5
SD	1.012	Std. Error of Mean	0.337
Coefficient of Variation	0.0767	Skewness	-0.433
Mean of logged Data	2.578	SD of logged Data	0.078

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.83	95% Adjusted-CLT UCL (Chen-1995)	13.7
		95% Modified-t UCL (Johnson-1978)	13.82

Nonparametric Distribution Free UCLs

95% CLT UCL	13.76	95% Jackknife UCL	13.83
95% Standard Bootstrap UCL	13.73	95% Bootstrap-t UCL	13.77
95% Hall's Bootstrap UCL	13.65	95% Percentile Bootstrap UCL	13.71
95% BCA Bootstrap UCL	13.72		
90% Chebyshev(Mean, Sd) UCL	14.21	95% Chebyshev(Mean, Sd) UCL	14.67
97.5% Chebyshev(Mean, Sd) UCL	15.31	99% Chebyshev(Mean, Sd) UCL	16.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.66	Mean	34.7
Maximum	82.3	Median	18.3
SD	28.23	Std. Error of Mean	9.409
Coefficient of Variation	0.813	Skewness	0.701

Mean of logged Data	3.214	SD of logged Data	0.884

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.2	95% Adjusted-CLT UCL (Chen-1995)	52.53
		95% Modified-t UCL (Johnson-1978)	52.57

Nonparametric Distribution Free UCLs

95% CLT UCL	50.18	95% Jackknife UCL	52.2
95% Standard Bootstrap UCL	48.9	95% Bootstrap-t UCL	56.27
95% Hall's Bootstrap UCL	47.74	95% Percentile Bootstrap UCL	49.25
95% BCA Bootstrap UCL	51.12		
90% Chebyshev(Mean, Sd) UCL	62.93	95% Chebyshev(Mean, Sd) UCL	75.72
97.5% Chebyshev(Mean, Sd) UCL	93.46	99% Chebyshev(Mean, Sd) UCL	128.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	47.1	Mean	48.72
Maximum	50.5	Median	48.6
SD	1.107	Std. Error of Mean	0.369
Coefficient of Variation	0.0227	Skewness	0.152
Mean of logged Data	3.886	SD of logged Data	0.0227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.41	95% Adjusted-CLT UCL (Chen-1995)	49.35
		95% Modified-t UCL (Johnson-1978)	49.41

Nonparametric Distribution Free UCLs

95% CLT UCL	49.33	95% Jackknife UCL	49.41
95% Standard Bootstrap UCL	49.29	95% Bootstrap-t UCL	49.44
95% Hall's Bootstrap UCL	49.37	95% Percentile Bootstrap UCL	49.3
95% BCA Bootstrap UCL	49.31		
90% Chebyshev(Mean, Sd) UCL	49.83	95% Chebyshev(Mean, Sd) UCL	50.33
97.5% Chebyshev(Mean, Sd) UCL	51.03	99% Chebyshev(Mean, Sd) UCL	52.39

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.29	Mean	4.863
Maximum	9.94	Median	3.7
SD	2.443	Std. Error of Mean	0.814
Coefficient of Variation	0.502	Skewness	1.133
Mean of logged Data	1.478	SD of logged Data	0.477

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.377	95% Adjusted-CLT UCL (Chen-1995)	6.531
		95% Modified-t UCL (Johnson-1978)	6.429

Nonparametric Distribution Free UCLs

95% CLT UCL	6.203	95% Jackknife UCL	6.377
95% Standard Bootstrap UCL	6.103	95% Bootstrap-t UCL	6.953
95% Hall's Bootstrap UCL	6.677	95% Percentile Bootstrap UCL	6.188
95% BCA Bootstrap UCL	6.42		
90% Chebyshev(Mean, Sd) UCL	7.306	95% Chebyshev(Mean, Sd) UCL	8.412
97.5% Chebyshev(Mean, Sd) UCL	9.948	99% Chebyshev(Mean, Sd) UCL	12.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.489	Mean	9.503
Maximum	40.6	Median	3.51
SD	12.85	Std. Error of Mean	4.282
Coefficient of Variation	1.352	Skewness	2.086
Mean of logged Data	1.276	SD of logged Data	1.66

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.47	95% Adjusted-CLT UCL (Chen-1995)	19.73
		95% Modified-t UCL (Johnson-1978)	17.96

Nonparametric Distribution Free UCLs

95% CLT UCL	16.55	95% Jackknife UCL	17.47
95% Standard Bootstrap UCL	16.25	95% Bootstrap-t UCL	25.71
95% Hall's Bootstrap UCL	42.62	95% Percentile Bootstrap UCL	16.31
95% BCA Bootstrap UCL	19.62		
90% Chebyshev(Mean, Sd) UCL	22.35	95% Chebyshev(Mean, Sd) UCL	28.17
97.5% Chebyshev(Mean, Sd) UCL	36.24	99% Chebyshev(Mean, Sd) UCL	52.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	18.88
Maximum	61.9	Median	16.3
SD	18.86	Std. Error of Mean	6.286
Coefficient of Variation	0.999	Skewness	1.584
Mean of logged Data	2.355	SD of logged Data	1.297

Note: Sample size is small (e.g., <10), If data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.57	95% Adjusted-CLT UCL (Chen-1995)	32.77
		95% Modified-t UCL (Johnson-1978)	31.13

Nonparametric Distribution Free UCLs

95% CLT UCL	29.22	95% Jackknife UCL	30.57
95% Standard Bootstrap UCL	28.47	95% Bootstrap-t UCL	37.45
95% Hall's Bootstrap UCL	79.61	95% Percentile Bootstrap UCL	29.29
95% BCA Bootstrap UCL	32.26		
90% Chebyshev(Mean, Sd) UCL	37.74	95% Chebyshev(Mean, Sd) UCL	46.28
97.5% Chebyshev(Mean, Sd) UCL	58.14	99% Chebyshev(Mean, Sd) UCL	81.42

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	170.1
Maximum	659	Median	83
SD	214.3	Std. Error of Mean	71.44
Coefficient of Variation	1.26	Skewness	1.72
Mean of logged Data	3.891	SD of logged Data	2.163

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	303	95% Adjusted-CLT UCL (Chen-1995)	331.4
		95% Modified-t UCL (Johnson-1978)	309.8

Nonparametric Distribution Free UCLs

95% CLT UCL	287.6	95% Jackknife UCL	303
95% Standard Bootstrap UCL	279.1	95% Bootstrap-t UCL	415.7
95% Hall's Bootstrap UCL	714.9	95% Percentile Bootstrap UCL	292
95% BCA Bootstrap UCL	327.8		
90% Chebyshev(Mean, Sd) UCL	384.4	95% Chebyshev(Mean, Sd) UCL	481.5
97.5% Chebyshev(Mean, Sd) UCL	616.3	99% Chebyshev(Mean, Sd) UCL	881

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	216
Maximum	878	Median	88.9
SD	289.6	Std. Error of Mean	96.54
Coefficient of Variation	1.341	Skewness	1.795
Mean of logged Data	4.017	SD of logged Data	2.256

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	395.5	95% Adjusted-CLT UCL (Chen-1995)	436.5
		95% Modified-t UCL (Johnson-1978)	405.1

Nonparametric Distribution Free UCLs

95% CLT UCL	374.8	95% Jackknife UCL	395.5
95% Standard Bootstrap UCL	363	95% Bootstrap-t UCL	616.2
95% Hall's Bootstrap UCL	1066	95% Percentile Bootstrap UCL	379.2
95% BCA Bootstrap UCL	439.1		
90% Chebyshev(Mean, Sd) UCL	505.6	95% Chebyshev(Mean, Sd) UCL	636.8
97.5% Chebyshev(Mean, Sd) UCL	818.9	99% Chebyshev(Mean, Sd) UCL	1177

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.36	Mean	279.5
Maximum	1110	Median	119
SD	368.3	Std. Error of Mean	122.8
Coefficient of Variation	1.318	Skewness	1.717
Mean of logged Data	4.281	SD of logged Data	2.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	507.7	95% Adjusted-CLT UCL (Chen-1995)	556.5
		95% Modified-t UCL (Johnson-1978)	519.5

Nonparametric Distribution Free UCLs

95% CLT UCL	481.4	95% Jackknife UCL	507.7
95% Standard Bootstrap UCL	470.1	95% Bootstrap-t UCL	790.2
95% Hall's Bootstrap UCL	1298	95% Percentile Bootstrap UCL	476
95% BCA Bootstrap UCL	541		
90% Chebyshev(Mean, Sd) UCL	647.8	95% Chebyshev(Mean, Sd) UCL	814.6
97.5% Chebyshev(Mean, Sd) UCL	1046	99% Chebyshev(Mean, Sd) UCL	1501

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	143.1
Maximum	530	Median	54.6
SD	182.8	Std. Error of Mean	60.95
Coefficient of Variation	1.278	Skewness	1.452
Mean of logged Data	3.776	SD of logged Data	1.979

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	256.4	95% Adjusted-CLT UCL (Chen-1995)	274.9
		95% Modified-t UCL (Johnson-1978)	261.4

Nonparametric Distribution Free UCLs

95% CLT UCL	243.4	95% Jackknife UCL	256.4
95% Standard Bootstrap UCL	237.3	95% Bootstrap-t UCL	378.7
95% Hall's Bootstrap UCL	310.7	95% Percentile Bootstrap UCL	247.8
95% BCA Bootstrap UCL	264.6		
90% Chebyshev(Mean, Sd) UCL	326	95% Chebyshev(Mean, Sd) UCL	408.8
97.5% Chebyshev(Mean, Sd) UCL	523.7	99% Chebyshev(Mean, Sd) UCL	749.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	111.5
Maximum	479	Median	42.8
SD	155.6	Std. Error of Mean	51.87
Coefficient of Variation	1.395	Skewness	1.958
Mean of logged Data	3.462	SD of logged Data	2.03

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	208	95% Adjusted-CLT UCL (Chen-1995)	233

		95% Modified-t UCL (Johnson-1978)	213.6

Nonparametric Distribution Free UCLs

95% CLT UCL	196.9	95% Jackknife UCL	208
95% Standard Bootstrap UCL	190.6	95% Bootstrap-t UCL	326.4
95% Hall's Bootstrap UCL	483.7	95% Percentile Bootstrap UCL	199.5
95% BCA Bootstrap UCL	222.1		
90% Chebyshev(Mean, Sd) UCL	267.2	95% Chebyshev(Mean, Sd) UCL	337.6
97.5% Chebyshev(Mean, Sd) UCL	435.5	99% Chebyshev(Mean, Sd) UCL	627.7

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.05	Mean	193.6
Maximum	762	Median	89.8
SD	247.5	Std. Error of Mean	82.5
Coefficient of Variation	1.279	Skewness	1.771
Mean of logged Data	3.992	SD of logged Data	2.204

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	347	95% Adjusted-CLT UCL (Chen-1995)	381.3
		95% Modified-t UCL (Johnson-1978)	355.1

Nonparametric Distribution Free UCLs

95% CLT UCL	329.3	95% Jackknife UCL	347
95% Standard Bootstrap UCL	318.6	95% Bootstrap-t UCL	505.3
95% Hall's Bootstrap UCL	894.5	95% Percentile Bootstrap UCL	337.1
95% BCA Bootstrap UCL	381.9		
90% Chebyshev(Mean, Sd) UCL	441.1	95% Chebyshev(Mean, Sd) UCL	553.2
97.5% Chebyshev(Mean, Sd) UCL	708.8	99% Chebyshev(Mean, Sd) UCL	1014

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.05	Mean	42.24
Maximum	171	Median	15.4
SD	55.52	Std. Error of Mean	18.51
Coefficient of Variation	1.314	Skewness	1.854
Mean of logged Data	2.872	SD of logged Data	1.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	76.65	95% Adjusted-CLT UCL (Chen-1995)	84.9
		95% Modified-t UCL (Johnson-1978)	78.56

Nonparametric Distribution Free UCLs

95% CLT UCL	72.68	95% Jackknife UCL	76.65
95% Standard Bootstrap UCL	70.86	95% Bootstrap-t UCL	112
95% Hall's Bootstrap UCL	169.1	95% Percentile Bootstrap UCL	73.36
95% BCA Bootstrap UCL	85.32		
90% Chebyshev(Mean, Sd) UCL	97.76	95% Chebyshev(Mean, Sd) UCL	122.9
97.5% Chebyshev(Mean, Sd) UCL	157.8	99% Chebyshev(Mean, Sd) UCL	226.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	267.4
Maximum	1100	Median	142
SD	350.2	Std. Error of Mean	116.7
Coefficient of Variation	1.31	Skewness	1.963
Mean of logged Data	4.224	SD of logged Data	2.346

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	484.5	95% Adjusted-CLT UCL (Chen-1995)	541.1
		95% Modified-t UCL (Johnson-1978)	497.2

Nonparametric Distribution Free UCLs

95% CLT UCL	459.4	95% Jackknife UCL	484.5

95% Standard Bootstrap UCL	453.1	95% Bootstrap-t UCL	707.8
95% Hall's Bootstrap UCL	1175	95% Percentile Bootstrap UCL	459.6
95% BCA Bootstrap UCL	538.7		
90% Chebyshev(Mean, Sd) UCL	617.6	95% Chebyshev(Mean, Sd) UCL	776.3
97.5% Chebyshev(Mean, Sd) UCL	996.5	99% Chebyshev(Mean, Sd) UCL	1429

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.22	Mean	3.837
Maximum	12	Median	2.73
SD	3.405	Std. Error of Mean	1.135
Coefficient of Variation	0.887	Skewness	1.992
Mean of logged Data	1.06	SD of logged Data	0.777

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.948	95% Adjusted-CLT UCL (Chen-1995)	6.51
		95% Modified-t UCL (Johnson-1978)	6.074

Nonparametric Distribution Free UCLs

95% CLT UCL	5.704	95% Jackknife UCL	5.948
95% Standard Bootstrap UCL	5.605	95% Bootstrap-t UCL	7.643
95% Hall's Bootstrap UCL	13.09	95% Percentile Bootstrap UCL	5.816
95% BCA Bootstrap UCL	6.421		
90% Chebyshev(Mean, Sd) UCL	7.243	95% Chebyshev(Mean, Sd) UCL	8.785
97.5% Chebyshev(Mean, Sd) UCL	10.93	99% Chebyshev(Mean, Sd) UCL	15.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	177.9
Maximum	728	Median	64.3

SD	242.2	Std. Error of Mean	80.72
Coefficient of Variation	1.361	Skewness	1.761
Mean of logged Data	3.911	SD of logged Data	2.056

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	328	95% Adjusted-CLT UCL (Chen-1995)	361.3
		95% Modified-t UCL (Johnson-1978)	335.9

Nonparametric Distribution Free UCLs

95% CLT UCL	310.7	95% Jackknife UCL	328
95% Standard Bootstrap UCL	304.4	95% Bootstrap-t UCL	516.4
95% Hall's Bootstrap UCL	794.2	95% Percentile Bootstrap UCL	314.4
95% BCA Bootstrap UCL	340.9		
90% Chebyshev(Mean, Sd) UCL	420.1	95% Chebyshev(Mean, Sd) UCL	529.7
97.5% Chebyshev(Mean, Sd) UCL	682	99% Chebyshev(Mean, Sd) UCL	981.1

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	5.48	Mean	13.81
Maximum	34.4	Median	8.1
SD	9.552	Std. Error of Mean	3.184
Coefficient of Variation	0.692	Skewness	1.406
Mean of logged Data	2.44	SD of logged Data	0.628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.73	95% Adjusted-CLT UCL (Chen-1995)	20.64
		95% Modified-t UCL (Johnson-1978)	19.98

Nonparametric Distribution Free UCLs

95% CLT UCL	19.05	95% Jackknife UCL	19.73
95% Standard Bootstrap UCL	18.68	95% Bootstrap-t UCL	23.09
95% Hall's Bootstrap UCL	20.72	95% Percentile Bootstrap UCL	18.84
95% BCA Bootstrap UCL	20.08		
90% Chebyshev(Mean, Sd) UCL	23.36	95% Chebyshev(Mean, Sd) UCL	27.69

97.5% Chebyshev(Mean, Sd) UCL	33.7	99% Chebyshev(Mean, Sd) UCL	45.49

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	102.9
Maximum	340	Median	86.5
SD	106.9	Std. Error of Mean	35.64
Coefficient of Variation	1.039	Skewness	1.4
Mean of logged Data	3.705	SD of logged Data	1.837

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	169.2	95% Adjusted-CLT UCL (Chen-1995)	179.3
		95% Modified-t UCL (Johnson-1978)	171.9

Nonparametric Distribution Free UCLs

95% CLT UCL	161.5	95% Jackknife UCL	169.2
95% Standard Bootstrap UCL	157.4	95% Bootstrap-t UCL	199.8
95% Hall's Bootstrap UCL	427.7	95% Percentile Bootstrap UCL	162.8
95% BCA Bootstrap UCL	172.3		
90% Chebyshev(Mean, Sd) UCL	209.8	95% Chebyshev(Mean, Sd) UCL	258.2
97.5% Chebyshev(Mean, Sd) UCL	325.4	99% Chebyshev(Mean, Sd) UCL	457.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	271.4
Maximum	1110	Median	124
SD	357.9	Std. Error of Mean	119.3
Coefficient of Variation	1.319	Skewness	1.886
Mean of logged Data	4.323	SD of logged Data	2.175

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	493.2	95% Adjusted-CLT UCL (Chen-1995)	547.7
		95% Modified-t UCL (Johnson-1978)	505.7

Nonparametric Distribution Free UCLs

95% CLT UCL	467.6	95% Jackknife UCL	493.2
95% Standard Bootstrap UCL	454.7	95% Bootstrap-t UCL	718.6
95% Hall's Bootstrap UCL	1192	95% Percentile Bootstrap UCL	473.5
95% BCA Bootstrap UCL	524.3		
90% Chebyshev(Mean, Sd) UCL	629.3	95% Chebyshev(Mean, Sd) UCL	791.4
97.5% Chebyshev(Mean, Sd) UCL	1016	99% Chebyshev(Mean, Sd) UCL	1458

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

APPENDIX B

JANUARY 2020 to APRIL 2021
DATA QUALITY SUMMARY REPORT

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APPENDIX B
DATA QUALITY SUMMARY REPORT
REMEDIAL INVESTIGATION

Former Skeet Range MRS03
Kingman Ground-to-Ground Gunnery Range
Kingman, Mohave County, Arizona

USACE Contract No. W912PL-17-C-0006

Prepared for:

United States Army Corps of Engineers
Los Angeles District

Prepared by:

NOREAS, Inc.
16361 Scientific Way
Irvine, CA 92618

November 2021

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TABLE

Table B-1 Equipment Blank Analytical Results for January 2020 to April 2021 Sampling Event

ABBREVIATIONS AND ACRONYMS

APN	Assessor's Parcel Number
bgs	below ground surface
CoC	chain-of-custody
COPC	chemical of potential concern
DoD	Department of Defense
DQO	Data Quality Objective
DU	Decision Unit
EB	equipment blank
FCFR	Field Change Form Request
FS	Feasibility Study
GPS	Global Positioning System
GTG	Ground-to-Ground
ISM	incremental sampling method
ITRC	Interstate Technology & Regulatory Council
LCS	laboratory control sample
LOQ	limit of quantitation
MRS	Munitions Response Site
MS/MSD	matrix spike and matrix spike duplicate
NOREAS	NOREAS, Inc.
PAHs	polycyclic aromatic hydrocarbons
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	quality system manual
RI	remedial investigation
RPD	relative percent difference
SIM	selected ion mode
TestAmerica	TestAmerica Laboratories, Inc.
USACE	United States Army Corp of Engineer
USEPA	U.S. Environmental Protection Agency
µg/k	micrograms per kilogram

B1.0 INTRODUCTION

This appendix describes the quality and usability of analytical data collected for the remedial investigation (RI) activities conducted at the Former Skeet Range Munitions Response Site 03 (MRS03[1]), Kingman Ground-to-Ground (GTG) Gunnery Range, (the MRS03 Site) in Kingman, Mohave County, Arizona. Data were collected during RI Addendum soil sampling using the incremental sampling method (ISM) at each parcel [identified by its unique assessor parcel number (APN)]. Soil sampling activities were conducted from January 21, 2020 through April 8, 2021 and followed the procedures specified in the *Final Remedial Investigation (RI) and Feasibility Study (FS) Work Plan, Formerly Used Defense Site, Military Munitions Response Program, MRS03-15 Skeet Ranges, Former Kingman Ground-to-Ground (GTG) Gunnery Range, Kingman, Mohave County, Arizona, Formerly Used Defense Site Property No. J09AZ041201* (Eco, 2014) (project Work Plan), as amended by the *Final Uniform Federal Policy Quality Assurance Project Plan Addendum No. 1 Remedial Investigation of Former Skeet Range MRS03, Kingman Ground-To-Ground Gunnery Range, Mohave County, Arizona* (NOREAS, 2018) (project Quality Assurance Project Plan [QAPP]).

The data quality evaluation was determined based on verification of field and laboratory quality assurance (QA)/quality control (QC) samples collected and analyzed during this project. QA/QC for field activities was ensured through rigorous documentation, equipment calibration (where applicable), and the collection of field QC samples. Additionally, QC analyses were performed by the analytical laboratory to determine analytical precision and accuracy of the analyses determined by laboratory control samples (LCSs), matrix spike and matrix spike duplicate (MS/MSD) samples, matrix duplicates, and surrogate spikes. In addition, results from method (laboratory) blanks were evaluated to assess the possibility of contamination of environmental samples that may have been introduced during sampling and laboratory activities. All analyses were performed in accordance with the Final QAPP (NOREAS, 2018) and the Department of Defense (DoD) Quality System Manual (QSM) version 5.1 (DoD, 2017) requirements. For this project, polycyclic aromatic hydrocarbons (PAHs) and metals: antimony, copper, lead, and zinc are considered the contaminants of potential concern (COPCs). COPCs were reported in mg/kg for metals and in microgram per kilogram (µg/kg) for PAHs.

All soil investigational samples collected during this project were submitted under documented chain-of-custody (CoC) procedures to Eurofins TestAmerica's Irvine, California facility. The Irvine facility repackaged samples for shipping to the Eurofins TestAmerica in Arvada, Colorado (Eurofins TestAmerica-Denver) facility, which maintains current Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) accreditations.

1

Environmental samples were processed using the ISM procedure and analyzed for PAHs by United States Environmental Protection Agency (USEPA) Method 8270C selected ion mode (SIM), and for the metals: antimony, copper, lead, and zinc by USEPA Method 6010B. Soil samples received at the laboratory were dried, mechanically ground, and incrementally sampled followed by digestion according to laboratory SOPs and analytical method. The soil samples for PAHs were processed through the same ISM procedure except for the grinding step as documented in the Field Change Request Form (FCRF)-001 (NOREAS, 2019a). Following ISM, samples were extracted and analyzed according to EPA method 8270C using gas chromatography/mass spectrometer (GC/MS) in SIM mode.

A third-party validation firm, Synectics in Sacramento, California, performed data validation on the chemical analyses for the project samples, as discussed in Section C5.0.

The chain-of-custody records, laboratory analytical results, and data validation reports are provided in Attachment 1 of the RI Addendum Report as a part of the parcel reports.

B2.0 FIELD DOCUMENTATION

A number of QA/QC measures were employed in the field to ensure that the environmental samples collected were representative of site conditions at the time of sampling. Field equipment was documented in a field notebook and field forms. Field documentation protocols included use of a field notebook, APN (parcel) field log form, photographic documentation of field sampling, global positioning system (GPS) coordinates of the parcel and sampling locations and CoC forms. The GPS survey data, field logs, and photographic logs for each parcel are presented as a part of the respective parcel report in Attachment 1, in the RI Addendum Report.

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B3.0 FIELD QUALITY CONTROL SAMPLES

In addition to the soil samples, field QC samples were collected and analyzed as specified in the Work Plan (Eco, 2014) and Final QAPP Addendum (NOREAS, 2018). During the RI Addendum, 118 equipment blanks were collected and analyzed. In addition, MS/MSDs were also collected and analyzed at a rate of 1 per 20 field samples as specified in the Final QAPP Addendum (NOREAS, 2018). To ensure data comparability, ISM sampling procedures of soil samples were followed using guidelines from the United States Army Corp of Engineer (USACE) guidelines (USACE, 2009) and the Interstate Technology & Regulatory Council (ITRC) guidance (ITRC, 2012), and analytical processes followed standardized protocols and published EPA analytical methods identical to the original field samples.

B3.1 Equipment (Rinsate) Blanks

During the January 2020 to April 2021 RI field sampling events, 118 field quality control equipment blank (EB) samples were collected and analyzed to evaluate the possibility of cross-contamination resulting from sampling equipment and activities. In accordance with the Final QAPP Addendum (NOREAS, 2018), an equipment rinsate was collected at the completion of each parcel sampled by washing the laboratory-provided rinse water over the cleaned hand auger bucket into the sample containers. Equipment blanks were submitted for analysis for PAHs by EPA Method 8270C SIM, and for the metals: antimony, copper, lead and zinc by EPA Method 6010B. In summary, data validation reported the following:

- Trace concentration of lead was detected in two EB samples. Zinc was detected at very low concentrations in five of the EB samples.
- Trace concentrations of select PAHs (e.g., 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, naphthalene, phenanthrene, and pyrene) were detected in five EB samples.
- Surrogate spike recovery exceeded project acceptance limits for PAHs in 17 EB samples.
- LCS recoveries and relative percent difference (RPD) values for select PAHs were outside project limits in eight EB samples.
- Holding time was outside prep hold time for five EB.
- Receipt temperature was outside limits for one EB.

Background detections in EB samples were primarily due to laboratory contamination as indicated by method blank data rather than field operations. Concentrations of these detected analytes in the associated samples were adjusted to “estimated,” “non-detected estimated,” or “non-detect”, as appropriate.

A detailed discussion of the validation qualification of EB samples is presented in Section C4.0. Relevant data validation qualifiers (i.e., “J”; “UJ”; “U”; “R”) are defined in Section C5.0 and data validation reports provided in Attachment 1 as a part of the parcel reports. A summary of the validation of equipment blanks collected by sample ID and associated parcel APN, analyte contaminants, limits of quantitation (LOQs), analytical results and qualified final results is provided in Table C-1.

B3.2 Field Duplicates/Triplicates

The purpose of field duplicate samples is to evaluate the precision of the overall sample collection and analysis processes by calculating the RPD for duplicate sample concentration. A field duplicate consists of two co-located samples of the same matrix collected at the same time and location, to the extent possible, using the same sampling techniques.

In accordance with the Final QAPP Addendum field duplicates were not collected as triplicate ISM samples were collected at each Decision Unit (DU)/parcel sampling grid. Soil samples were collected from each DU as 3 replicates to represent the surface soils (0- to 2-inches), and as 3 replicates for the subsurface soils [0- to 1 foot below ground surface (bgs); 1- to 2 feet bgs, and if required, 2- to 3 feet bgs, 3- to 4-feet bgs, 4- to 5-feet bgs, and 5- to 6-feet bgs]. The sampling process was repeated for the two subsequent replicate samples used the same sampling techniques, and collected at the same time and location.

B3.3 Matrix Spike and Matrix Spike Duplicate Samples

MS/MSD samples are prepared for chemical analysis by spiking the sample with a known amount of a target analyte. Following spike addition, the sample is carried through the complete sample preparation process along with the other samples in the batch. The percent recoveries (%Rs) for the MS/MSD samples are compared against each other and against the known amount of the spike to determine the accuracy (bias) of the analytical process. RPD from the MS/MSD samples is also calculated to evaluate the precision of the analytical process. For this project, one MS/MSD sample was collected for approximately every 20 soil samples. A detailed evaluation is presented in Section C4.0.

B4.0 LABORATORY QUALITY CONTROL

Laboratory QC samples were prepared and analyzed by the laboratory to monitor the analytical accuracy and precision processes. The laboratory analyzed all QC samples at the method-required frequencies and as specified in the project-specific Final QAPP Addendum (NOREAS, 2018) and DoD QSM version 5.1 (DoD, 2017). The laboratory QC samples for this project included method/laboratory blanks, initial and continuing calibration blanks, LCSs, initial and continuing calibration verifications, second source calibration verification standards (PAHs only), surrogate spikes (PAHs only), interference check standards (metals only), and MS/MSD samples.

Laboratory QC analyses were within the project-specified or method criteria except for the following constituents and samples:

Synectics #280-133155-1

Lab Work Order# 280-133155-1: (APN32405263A, APN32405265)

PAHs by EPA Method 8270C SIM

- Lab method blank for benzo(a) anthracene, chrysene, fluoranthene, phenanthrene, and pyrene, detected in EB-01212020, were adjusted to "U"-flag (not detected) at the limit of quantitation (LOQ). Chrysene, fluoranthene, phenanthrene, and pyrene detected in EB-01222020, were qualified using a "U"-flag.
- Lab method blank was outside the control limit for 2- methylnaphthalene, qualified using a "U"-flag in affected samples MRS03-APN32405263A-SS001R, -SS002R, -SS003R, and -SS1001R. Method blank and surrogate recoveries were outside control limits for 2-methylnaphthalene, qualified using a "UJ"-flag in affected samples MRS03-APN32405263A-SS1002R, -SS1003R, and -SS2001R through -SS2003R.
- Surrogate recovery was outside the control limit for dibenz(a,h)anthracene, qualified using a "UJ"-flag in affected sample MRS03-APN32405263A-SS1002R, and for acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene, qualified using a "UJ"-flag in affected samples MRS03-APN32405263A-SS1003R and -SS2003R. Surrogate recoveries were outside control and trace level detects for acenaphthene, anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, and naphthalene, qualified using a "J"-flag (estimated) in affected sample MRS03-APN32405263A-SS1002R, and naphthalene, qualified using a "U"-flag in affected samples MRS03-APN32405263A-SS1003R and -SS2003R.
- MS and surrogate recoveries were outside control limits for benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene qualified using a "J"-flag in affected sample MRS03-APN32405263A-SS1002R. MS and surrogate

recoveries were outside control limits and trace level detect for benzo(a)pyrene, qualified using a "J"-flag in affected sample MRS03-APN32405263A-SS1002R.

- Surrogate recoveries were outside control limits for acenaphthene, qualified using a "J"-flag in affected sample MRS03-APN32405265-SS003R, for acenaphthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluorene, indeno(1,2,3-cd)pyrene, and phenanthrene, qualified using a "J"-flag and anthracene and dibenz(a,h)anthracene, qualified using a "UJ"-flag (not detected estimated) in affected sample MRS03-APN32405265-SS1003R; for acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene qualified using a "UJ"-flag in affected samples MRS03-APN32405265-SS2002R and -SS2003R.
- Lab method blank was outside the control limit for 2-methylnaphthalene qualified using a "U"-flag in affected sample MRS03-APN32405265-SS001R, -SS002R, -SS003R, and SS1002R.
- Surrogate recoveries and lab method blank detect was outside control limits for 2-methylnaphthalene, qualified using a "UJ"-flag in affected samples MRS03-APN32405265-SS1001R, -SS1003R, -SS2002R, and -SS2003R. Surrogate recoveries was outside control limit and trace level detect for naphthalene, qualified using a "J"-flag in affected samples MRS03-APN32405265-SS1001R, -SS2002R, and -SS2003R; and for acenaphthene, benzo(a)anthracene, benzo(k)fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, and phenanthrene, qualified using a "J"-flag in affected sample MRS03-APN32405265-SS1003R.

Metals by EPA Method 6010B

- MS recoveries outside control limits for antimony, lead, and zinc in affected sample MRS03-APN32405263A-SS1002R were qualified using a "UJ"-flag or a "J"-flag.

Synectics #280-133194-1

Lab Work Order# 280-133194-1: (APN32437017, APN31021063B)

PAHs by EPA Method 8270C SIM

- Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and chrysene detected at trace concentrations in method blank and LCS recovery for benzo(a)anthracene in EB-01232020 were adjusted to a "U"-flag or a "UJ"-flag at the LOQ.
- LCS recovery for benzo(a)anthracene was slightly outside project limits in EB-01232020, qualified using a "UJ"-flag.
- LCS recovery for benzo(a)anthracene, qualified using a 'UJ"-flag, and lab method blank for benzo(a)pyrene, benzo(b)fluoranthene, and chrysene qualified using a 'U"-flag, were outside project limits for EB-01242020.

Metals by EPA Method 6010B

- Interference check exceeded for antimony, were qualified using a "UJ"-flag.
- MS/MSD recoveries outside control limits for antimony, copper, lead, and zinc in affected (spiked) sample MRS03-APN32437017-SS001R, were qualified using a "UJ"-flagfor antimony, and a "J"-flag for copper, lead, and zinc.

Synectics #280-133354-1

Lab Work Order# 280-133354-1: (APN31021063C, APN31021063D, APN31021063E)

PAHs by EPA Method 8270C SIM

- Acenaphthene and/or phenanthrene were detected in method blank at levels below half the LOQ. Therefore, analyte results in the affected samples were adjusted to UJ" at the LOQ or at the LOD values.
- LCS was exceeded for acenaphthene, 2-methylnaphthalene, fluorene, and naphthalene in affected sample MRS03-APN31021063D-SS00, qualified using a "UJ"-flag.
- MS recoveries outside control limits for fluoranthene and pyrene in affected sample MRS03-APN31021063C-SS1001 were qualified using a "J"-flag.
- MS RPD value outside control limits for fluoranthene and naphthalene in affected sample MRS03-APN31021063C-SS1001 were qualified using a "J"-flag.
- Maximum extraction holding time was exceeded for PAHs in samples MRS03-APN31021063D-SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, -SS2003; MRS03-APN31021063E-SS1002, -SS1003, -SS2001, -SS2002, and –SS2003, but within 2x the extraction holding time. All PAHs were qualified using a "J"-flag or"UJ"-flag.
- Surrogate recovery were outside control limits for MRS03-APN31021063C-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS2001, -SS2003 and MRS03-APN31021063E-SS1001. Sample results were qualified using a "UJ"-flag or a "J"-flag for detections.

Metals by EPA Method 6010B

- Copper was detected in the grinding blanks. Affected samples MRS03-APN31021063C-SS1001, -SS1002; -SS2001 through –SS2003; and MRS03-APN31021063E-SS003 were qualified using a "UJ"-flag or a "J"-flag.
- MS/MSD recoveries outside control limits for antimony, copper, lead, and/or zinc in affected samples MRS03- APN31021063C-SS1001 and MRS03-APN31021063E-SS1002 were qualified using a "J"-flag or "UJ"-flag.

Synectics #280-133388-1

Lab Work Order# 280-133388-1: (APN31021063F, APN31021063G)

PAHs by EPA Method 8270C SIM

- MS recoveries were outside control limits for select PAHs in affected sample MRS03-APN31021063G-SS003, qualified using a "J"-flag. MS/MSD RPD in affected sample MRS03- APN31021063G-SS003 exceeded project limit and qualified using a "J"-flag.
- Surrogate recoveries were outside of the project limits in sample MRS03-APN31021063F-SS001. Analyte results were qualified using "J"-flag or "UJ"-flag.

Metals by EPA Method 6010B

- MS recoveries were outside control limits for antimony, copper, lead, and zinc in affected sample MRS03-APN31021063G-SS003. Copper, lead and zinc were qualified using a "J"-flag and antimony, qualified using "UJ"-flag.
- Trace amount of lead was detected in the laboratory calibration blank and method blank, but below the LOQ. Lead concentration in the affected samples, EB-01302020 and EB-01312020, were adjusted using a "U"-flag at the LOQ.

Synectics #280-133798-1

Lab Work Order# 280-133798-1: (APN31021063A, APN31021063H, APN31021063I)

PAHs by EPA Method 8270C SIM

- Lab blank outside project limit for 2-methylnaphthalene, was qualified using a 'U"-flag in EB-02122020.
- MS recoveries were outside project limit for fluoranthene in affected sample MRS03-APN31021063A-SS1002 using a "J-flag" for detected results. MS/MSD RPD and MS recoveries were outside project limits for several PAHs. All PAHs were qualified in the affected sample MRS03-APN31021063H-SS003 using a "J"-flag for detected results.

Metals by EPA Method 6010B

- MS and/or MSD recoveries were outside control limits for antimony, lead, and zinc. Data for these analytes in affected (spiked) samples MRS03-APN31021063A-SS1002 and MRS03-APN31021063H-SS003 were qualified using a "J"-flag or "UJ"-flag. MS recovery was outside control limit for copper in affected sample MRS03-APN31021063A-SS1002; qualified using a "J"flag.
- Post spike recovery (M2) for lead exceeded control limits. Lead result in sample MRS03-APN31021063H-SS003 was qualified using a "J"-flag.

Synectics #280-133817-1

Lab Work Order# 280-133817-1: (APN31021063J, APN31021063K)

PAHs by EPA Method 8270C SIM

- Benzo(a)pyrene exceeded the MSD recovery criteria in affected sample MRS03-APN31021063J-SS003 was qualified using a "J"-flag.

- MS RPD recovery was outside project limits for benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene, qualified using a "J"-flag; MS and MS RPD recoveries were outside project limit for benzo(a)pyrene, qualified using a "J"-flag in affected sample MRS03-APN31021063J-SS003; and MS recovery was outside project limit for and trace level detect for 2-methylnaphthalene, qualified using a "J"-flag in affected sample MRS03-APN31021063J-SS003.
- Interference check and trace level detect for 2-methylnaphthalene and naphthalene qualified using a "J"-flag in affected sample MRS03-APN31021063J-SS2001.

Metals by EPA Method 6010B

- MS recoveries were outside control limits for antimony, lead, and zinc. Data for these analytes in affected sample MRS03-APN31021063J-SS003 were qualified using a "J"-flag for lead and zinc results and a "UJ"-flag for antimony.

Synectics #280-133930-1

Lab Work Order# 280-133930-1: (APN31021078A, APN32405267)

PAHs by EPA Method 8270C SIM

- Preparatory holding time exceeded for sample MRS03-APN31021078A-SS2001, resulting in validation qualification of "J"-flag for detects "UJ" for non-detects for all PAHs.
- Surrogate recoveries for all 16 PAHs were outside project limits in samples MRS03-APN31021078A-SS002, MRS03-APN32405267-SS1001R, and MRS03-APN32405267-SS2003R. Data were qualified using a "J"-flag or "UJ"-flag for all PAHs.

Metals by EPA Method 6010B

- MS recovery for antimony was outside control limit in affected sample MRS03-APN31021078A-SS1001 was qualified using a "UJ"-flag. MRS03-APN31021063J-SS003 were qualified using a "J"-flag for lead and zinc an "UJ"-flag for antimony.

Synectics #280-133977-1

Lab Work Order# 280-133977-1: (APN31021078B, APN32404668)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-02212020, were qualified using a 'UJ"-flag.
- Trace level of 2-methylnaphthalene was detected in the method blank at a level below ½ the LOQ. Therefore, analyte results in the affected samples MRS03-APN31021078B-SS001 and –SS003 were adjusted to "UJ"-flag at the LOD.
- MS recoveries outside project limits for pyrene, chrysene, fluoranthene, and benzo(b)fluoranthene in affected sample MRS03-APN31021078B-SS003 were qualified using a "J"-flag.

- Detections in the method blank outside acceptance criteria for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene in sample MRS03-APN32404688-SS2001, were qualified with a "U"-flag.
- Laboratory replicate RPD outside acceptance criteria affected samples MRS03-APN32404688-SS1001, -SS1002, and -SS1003. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene were qualified with a "J"-flag.
- Surrogate recoveries were outside acceptance criteria. In sample MRS03-APN32404688-SS001, 2—methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, and pyrene were qualified with a "J"-flag and fluorene was qualified with a "UJ"-flag. In sample MRS03-APN32404688- SS1003, 2-methylnaphthalene, acenaphthene, anthracene, dibenz(a,h)anthracene, fluorene, and naphthalene were qualified with a "J"-flag.

Metals by EPA Method 6010B

- Method blank was outside the control limit for copper in affected samples MRS03-APN31021078B-SS001R, -SS002R, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 and qualified using a "U"-flag (undetected).
- Due to interference check sample outside acceptance criteria, antimony in samples MRS03-APN32404688-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified with a "UJ"-flag.
- Due to MS recovery outside acceptance criteria, zinc in samples MRS03-APN32404688-SS1001, -SS1002, and -SS1003 were qualified with a "J"-flag.

Synectics #280-134120-1

Lab Work Order# 280-134120-1: (APN31021078C, APN32404558)

PAHs by EPA Method 8270C SIM

- LCS recoveries outside project limits in EB-02252020 and EB-02262020 for all PAHs were qualified using a "UJ"-flag.
- MS recoveries and MS/MSD RPD values outside project limits in sample MRS03-APN32404558-SS003R for select PAHs in affected sample MRS03-APN32404558-SS003R, were qualified using a "J"-flag.

Metals by EPA Method 6010B

- MS recoveries were outside project limits for antimony, qualified using a "UJ"-flag and lead qualified using a "J"-flag, in affected sample MRS03-APN32404558-SS003R.

Synectics #280-134175-1

Lab Work Order# 280-134175-1: (APN31021078D, APN31021078E)

PAHs by EPA Method 8270C SIM

- LCS recoveries outside project limits in EB-02272020 and EB-02262020 for all PAHs were qualified using a "UJ"-flag. RPD recovery and trace detection of phenanthrene in sample EB-02272020 was qualified using a "J"-flag.

Metals by EPA Method 6010B

- Method blank was outside the control limit for copper in affected sample MRS03-APN31021078E-SS2002R and qualified using a "J"-flag.
- MS recovery was outside the limit for antimony in affected sample MRS03-APN31021078E-SS1003 were qualified using a "U"-flag.
- Laboratory RPD, RSD and MS recovery and RPD for lead in affected sample MRS03-APN31021078E-SS1003 were qualified using a "J"-flag.

Metals by EPA Method 6010B

- MS recovery was outside the limit for antimony in affected samples MRS03-APN31021078D-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a "UJ"-flag. Lead and zinc in affected sample MRS03-APN31021078D-SS1003 were qualified using a "J"-flag.
- MS recovery was outside the limit for antimony in affected sample MRS03-APN31021078E-SS1003 were qualified using a "U"-flag.
- Laboratory RPD, RSD and MS recovery and RPD for lead in affected sample MRS03-APN31021078E-SS1003 were qualified using a "J"-flag.

Synectics #280-134332-1

Lab Work Order# 280-134332-1: (APN31021078F)

PAHs by EPA Method 8270C SIM

- Closing continuing calibration verification (CCV) standard recoveries for indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene outside project limits in affected samples APN31021078F-SS1001, -SS1002, and –SS1003, were qualified using a "J"-flag.
- MSD recoveries outside project limits for benzo(g,h,i)perylene in sample MRS03-APN31021078F-SS1002, was qualified using a "J"-flag.

Metals by EPA Method 6010B

- Lab duplicate RPD value outside project limit for lead in sample MRS03-APN31021078F-SS1002, was qualified using a "J"-flag.

- MS and MSD recoveries wereoutside project limits for antimony, qualified using a "UJ"-flag, and lead and zinc qualified using a "J"-flag, in affected sample MRS03-APN31021078F-SS1002.
- Serial dilution test result for lead was outside acceptance limit of ±10%. Lead result in affected sample MRS03-APN31021078F-SS1002 was qualified using a "J"-flag.

Synectics #280-134405-1

Lab Work Order# 280-134405-1: (APN31021078G)

PAHs by EPA Method 8270C SIM

- MSD and MS/MSD RPD recoveries outside project limits in sample MRS03-APN31021078G-SS002 for select PAH, were qualified using a "J"-flag.
- Surrogate recovery for 2-methylnaphthalene outside project limits in sample MRS03-APN31021078G-SS1002 for all PAHs analyzed, were qualified using a "J"-flag or "UJ"-flag. .

Metals by EPA Method 6010B

- Trace values of copper were found in the laboratory grinding blank. Copper detections in affected samples MRS03-APN31021078G-SS001, -SS003, -SS1001, -SS1002, -SS1003, and -SS2003 were qualified using a "U"-flag.
- Laboratory triplicate analysis RSD slightly exceeding the control limit for lead in affected sample MRS03-APN31021078G-SS002, was qualified using a "J"-flag.
- MS/MSD recoveries were outside project limits for antimony, qualified using a "UJ"-flag, and lead and zinc, qualified using a "J"-flag, in affected sample MRS03-APN31021078G-SS002.
- Serial dilution test result for lead was outside acceptance limit of ±10%. Lead result in affected sample MRS03-APN31021078G-SS002 was qualified using a "J".

Synectics #280-134430-1

Lab Work Order# 280-134430-1: (APN31021078H, APN32439020)

PAHs by EPA Method 8270C SIM

- Trace levels of acenaphthene, 2-methylnaphthalene, and naphthalene were detected in the method blank at levels below ½ the LOQ. Therefore, analyte results in the affected samples MRS03-APN31021078H-SS001, SS002, –SS003, -SS1001, -SS1003, and –SS2003 and MRS03-APN32439020-SS001R, –SS002R, -SS003R, -SS1001R, and -SS1002R were qualified using a "U"-flag.
- Surrogate recovery for 2-methylnaphthalene were outside project limits in sample MRS03-APN31021078H-SS2002 for all PAHs were qualified using a "UJ"-flag.

Metals by EPA Method 6010B

- MS/MSD recoveries were outside project limits for antimony, qualified using a "UJ"-flag, and lead and zinc, qualified using a "J"-flag, in affected sample MRS03-APN31021078H-SS2001.

Synectics #280-140621-1

Lab Work Order# 280-140621-1: (APN 31021078E-SS1001R to -2003R)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside project limit for all 16 PAHs in affected samples MRS03-APN31021078E-SS003R and -SS2001R. With the exception of fluoranthene and all 16 PAHs for -SS2001R, qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag.

Metals by EPA Method 6010B

- Method blank was outside the control limit for copper in affected sample MRS03-APN31021078E-SS2002R and qualified using a "J"-flag.
- Laboratory RPD, RSD and MS recovery and RPD for lead in affected sample MRS03-APN31021078E-SS1003 were qualified using a "J"-flag.

Synectics #280-140622-1

Lab Work Order# 280-140622-1:(APN31021078B-SS001R, -002R, -1002R, -2001R, -2002R)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside project limits for all 16 PAHs in affected sample MRS03-APN31021078B-SS001R. With the exception of fluoranthene, qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag.

Metals by EPA Method 6010B

- Method blank was outside the control limit for copper in affected samples MRS03-APN31021078B-SS001R, -SS002R, qualified using a "U"-flag.
- MS recovery was outside the control limit for antimony, qualified using a "UJ"-flag, and zinc, qualified using a "J"-flag in affected sample MRS03-APN31021078B-SS2002R.

Synectics #280-140647-1

Lab Work Order# 280-140647-1:(APN 31021078I, 31021078J)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside project limits for all 16 PAHs in affected sample MRS03-APN31021078I-SS2002, qualified using a "UJ"-flag.
- Surrogate recovery was outside project limits for all 16 PAHs in affected sample MRS03-APN31021078J-SS2002, qualified using a "UJ"-flag.

Metals by EPA Method 6010B

- Method blank was outside the control limit for copper in affected sample MRS03-APN31021078I-SS1001 and qualified using a "U"-flag.
- MS recovery was outside project limits for zinc and antimony in affected sample MRS03-APN31021078I-SS1002, qualified using a "J"-flag.
- Lab replicate RPD, lab triplicate RSD, MS RPD, recovery, and M2 for lead was qualified using a "J"-flag in affected sample MRS03-APN31021078I-SS1002.
- Method blank was outside the control limit for copper in affected sample MRS03-APN31021078J-SS1001 and qualified using a "U"-flag.
- MS recovery was outside project limits for antimony in affected sample MRS03-APN31021078J-SS1002, qualified using a "UJ"-flag.
- Lab replicate RPD, lab triplicate RSD, MS RPD, recovery, and M2 for lead was qualified using a "J"-flag in affected sample MRS03-APN31021078J-SS1002.

Synectics #280-140773-1

Lab Work Order# 280-140773-1:(APN 31021078K)

PAHs by EPA Method 8270C SIM

- Method blank was outside the control limit for benzo(k)fluoranthene, qualified using a "J"-flag, and dibenz(a,h)anthracene, qualified using a "U"-flag, in affected sample MRS03-APN31021078K-SS001; for dibenz(a,h)anthracene, qualified using a "U"-flag, in affected samples MRS03-APN31021078K-SS002 and -SS003; for fluoranthene and pyrene, qualified using a "U"-flag, and 2-methylnaphthalene, fluoranthene, naphthalene, and phenanthrene, qualified using a "U"-flag in affected sample MRS03-APN31021078K-SS1001; for benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene, qualified using a "U"-flag, and benzo(b)fluoranthene, qualified using a "J"-flag in affected sample MRS03-APN31021078K-SS1002; for 2-methylnaphthalene, naphthalene, and phenanthrene, qualified using a "U"-flag in affected sample MRS03-APN31021078K-SS2001; and for benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene, qualified using a "U"-flag, in affected sample MRS03-APN31021078K-SS2003.
- Surrogate recovery was outside project limits for 2-methylnaphthalene, acenaphthene, anthracene, dibenz(a,h)anthracene, fluorene, naphthalene, phenanthrene, qualified using a "J"-flag , and for fluoranthene and pyrene, qualified using a "J"-flag, in affected sample MRS03-APN31021078K-SS1001; and for all 16 PAHs in affected sample MRS03-APN31021078J-SS2002, qualified using a "UJ"-flag.
- Surrogate recovery and method blank was outside the control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-

cd)pyrene in affected sample MRS03-APN31021078K-SS1003, qualified using a "UJ"-flag.

Metals by EPA Method 6010B

- Method blank was outside the control limit for copper in affected sample MRS03-APN31021078K-SS001 and qualified using a "U"-flag.

Synectics #280-140842-1

Lab Work Order# 280-140842-1:(APN 31021078M)

PAHs by EPA Method 8270C SIM

- Method blank was outside project limits for dibenz(a,h)anthracene, qualified using a "UJ"-flag in affected samples MRS03- APN31021078M-SS001 and -SS002, and benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene, qualified using a "U"-flag in affected samples MRS03- APN31021078M-SS1001, -SS1002, and -SS1003.
- Surrogate recovery was outside project limit for 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, naphthalene, phenanthrene, and pyrene, qualified using a "J"-flag and fluorene using a "UJ"-flag in affected sample MRS03-APN31021078M-SS003; and for all 16 PAHs using a "UJ"-flag for all analytes except naphthalene, qualified using a "J"-flag, in in affected sample MRS03- APN31021078M-SS2003.
- MS recovery was outside the control limit for indeno(1,2,3-cd)pyrene in affected sample MRS03- APN31021078M-SS002.
- MS and MS RPD recoveries were outside the control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-APN31021078M-SS002.
- Method blank, and MS and MS RPD recoveries were outside the control limit for benzo(k)fluoranthene, qualified using a "J"-flag in affected sample MRS03-APN31021078M-SS002.
- Method blank and surrogate recovery were outside the control limit for benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene, qualified using a "J"-flag, and dibenz(a,h)anthracene qualified using a "IJ"-flag in affected sample MRS03-APN31021078M-SS003.

Metals by EPA Method 6010B

- MS recovery was outside the control limit for antimony, qualified using a "UJ"-flag, and lead, qualified using a "J"-flag in affected sample MRS03- APN31021078M-SS002.

Synectics #280-140843-1

Lab Work Order# 280-140843-1:(APN31021078E-SS001R to -SS003R))

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside project limit for all 16 PAHs in affected samples MRS03-APN31021078E-SS003R. Except for fluoranthene, qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag.

Synectics #280-140844-1

Lab Work Order# 280-140844-1 (APN31021078L)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside project limits for all 16 PAHs in affected sample MRS03-APN31021078L-SS003. With exception of 2-methylnaphthalene, anthracene, dibenz(a,h)anthracene, fluoranthene, and fluorene, qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag.

Metals by EPA Method 6010B

- MS recovery was outside the control limit for antimony in affected sample MRS03-APN31021078L-SS003 qualified using a "UJ"-flag.

Synectics #280-140845-1

Lab Work Order# 280-140845-1 (APN31021078B-SS003R, -1001R, -1003R))

- No qualified results

Synectics #280-140883-1

Lab Work Order# 280-140883-1 (APN31021078N, APN31038002D)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-09242020, were qualified using a 'UJ"-flag.
- Surrogate recovery was outside project limits for all 16 PAHs in affected sample MRS03-APN31021078N-SS002. With exception of fluorene, qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag; and for acenaphthene, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, and phenanthrene, qualified using a "UJ"-flag, in affected sample MRS03- APN31021078N-SS1002.
- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002D-SS001 and -SS002. With the exception of acenaphthene, anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, and phenanthrene in sample MRS03-APN31038002D-SS001, qualified using a "UJ"-flag for detected results, all other analytes were qualified using a "J"-flag. With the exception of acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene,

dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, and phenanthrene in sample MRS03-APN31038002D-SS002, qualified using a "UJ"-flag for detected results, all other analytes were qualified using a "J"-flag.

- Method blank outside the control limit for copper in affected sample MRS03-APN31038002D-002, was qualified using a "U" flag for detected results.

- MS recovery outside control limit in affected sample MRS03-APN31038002D-SS2001 was qualified using a "UJ"-flag for antimony and "J"-flag for copper, lead, and zinc. M2 outside control limit for zinc in affected sample MRS03-APN31038002D-SS2001 was qualified using a "J"-flag for detected result.

Synectics #280-141025-1

Lab Work Order# 280-141025-1 (APN31021078B-SS2003R, APN31021078K-SS1001R, APN31021078M-SS2001R)

PAHs by EPA Method 8270C SIM

- Method blank was outside the control limit for 2-methylnaphthalene in affected samples MRS03-APN31021078B-SS001 and -SS003 using a "UJ"-flag; for 2-methylnaphthalene, fluoranthene, and naphthalene in affected sample MRS03-APN31021078B-SS2003R; for 2-methylnaphthalene, fluoranthene, naphthalene, and phenanthrene, qualified using a "U"-flag in affected sample MRS03-APN31021078K-SS1001; and for 2-methylnaphthalene, naphthalene, and phenanthrene, qualified using a "U"-flag in affected sample MRS03-APN31021078M-SS2001R.

Synectics #280-1401028-1

Lab Work Order# 280-141028-1 (APN31038002C)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002C-SS001, -SS002, -SS003, in affected samples MRS03-APN31038002C-SS002, SS2001, -SS2002, and -SS2003. With the exception of anthracene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and fluorene in MRS03-APN31038002C-SS001, acenaphthene, anthracene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and fluorene in MRS03-APN31038002C-SS002, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, , dibenz(a,h)anthracene, fluorene, and indeno(1,2,3-cd)pyrene in in MRS03-APN31038002C-SS003, and all16 PAH analytes in MRS03-APN31038002C-SS2001 through -SS2003 qualified using a "UJ"-flag for detected results, all other analytes were qualified using a "J"-flag.

- Method blank were outside the control limit for 2-methylnaphthalene, acenaphthene, fluoranthene, naphthalene and phenanthrene in affected samples MRS03-APN31038002C-SS001 and -SS003, for 2-methylnaphthalene, fluoranthene, naphthalene and phenanthrene in affected sample MRS03-APN31038002C-SS002 and -SS1001, for 2-methylnaphthalene and naphthalene in affected samples MRS03-APN31038002C-SS1002, -SS1003, -

SS2001, -SS2002, and -SS2003. With the exception of naphthalene in samples MRS03-APN31038002C-SS003 qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag.

Metals by EPA Method 6010B

- Lab triplicate RSD outside control limit for copper and lead in affected sample MRS03-APN31038002C-SS1002, was qualified using a "J" flag.
- MS recovery outside control limit for antimony in affected sample MRS03-APN3103800C-SS1002 was qualified using a "UJ"-flag for detected result.

Synectics #280-141126-1

Lab Work Order# 280-141126-1 (APN31038002A, APN31038002P)

PAHs by EPA Method 8270C SIM

- MS recovery were outside control limit for antimony qualified using a "UJ"-flag in affected sample MRS03-APN31038002P-SS003.

Synectics #280-1401129-1

Lab Work Order# 280-141129-1 (APN31038002M)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002M-SS002. With the exception of 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, and phenanthrene in affected sample MRS03-APN31038002M-SS002, and 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene in affected sample MRS03-APN31038002M-SS2003 qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag.
- MS recovery were outside control limit for antimony qualified using a "UJ"-flag in affected sample MRS03-APN31038002M-SS003.
- Method blank outside the control limit for copper in affected samples MRS03-APN31038002M-SS003, -SS1003, -SS2001, -SS2001, and -SS2003, were qualified using a "U"-flag.

Synectics #280-141344-1

Lab Work Order# 280-141344-1 (APN31038002O)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002O-SS001 and -SS002. With the exception of acenaphthene, anthracene, dibenz(a,h)anthracene, and fluorene in affected sample MRS03-APN310380020-SS001, and acenaphthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and fluorene in affected sample MRS03-APN31038002O-SS002, were qualified using a "UJ"-flag, , all other analytes were qualified using a "J"-flag.

Synectics #280-141345-1

Lab Work Order# 280-141345-1 (APN31038002L)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002L-SS1001, -SS1002, and -SS2002, qualified using a "UJ"-flag.

Metals by EPA Method 6010B

- MS recovery were outside control limit for antimony qualified using a "UJ"-flag and lead qualified using a "U"-flag for MRS03-APN31038002L-SS2001.

Synectics #280-141379-1

Lab Work Order# 280-141379-1 (APN31038002J)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002J-SS002 and -SS2001. With the exception of 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene in affected sample MRS03-APN31038002J-SS002 qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag in samples MRS03-APN31038002J-SS002 and -SS2001.

Metals by EPA Method 6010B

- MS recovery were outside control limit for antimony qualified using a "UJ"-flag and lead qualified using a "U"-flag for MRS03-APN31038002L-SS2001.

Synectics #280-141415-1

Lab Work Order# 280-141415-1 (APN31038002K)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-10072020, were qualified using a 'UJ"-flag.
- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002K-SS002, -SS003, and -SS2003. With the exception of, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene in affected sample MRS03-APN31038002K-SS002, and benzo(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene in affected sample MRS03-APN31038002K-SS003 qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag in samples MRS03-APN31038002K-SS002, -SS003, and -SS2003.
- MS and surrogate recoveries and trace level detects for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene in affected sample MRS03-APN31038002K-SS002 was qualified using a "J"-flag.

Metals by EPA Method 6010B

- MS and M2 recoveries were outside control limit for antimony, qualified using a "UJ"-flag, MS recoveries were outside control limit for lead and zinc qualified using a "J"-flag for MRS03-APN31038002K-SS002.

Synectics #280-141435-1

Lab Work Order# 280-141435-1 (APN31038002E)

- No qualifiers required

Synectics #280-141651-1

Lab Work Order# 280-141651-1 (APN31038002G)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002G-SS1003, -SS2001, -SS2002, and -SS2003. With the exception of 2-methylnaphthalene in affected samples MRS03-APN31038002G-SS2001 and -SS2003, qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag.
- MS recovery was outside the limit for antimony in affected sample MRS03-APN31021063G-SS003, qualified using a "UJ"-flag.

Synectics #280-141652-1

Lab Work Order# 280-141652-1 (APN31038002-SS001R and -SS002R)

- No qualifiers required

Synectics #280-141684-1

Lab Work Order# 280-141684-1 (APN31038002F, APN31038002I)

PAHs by EPA Method 8270C SIM

- MS, MS RPD recoveries were outside control limits for benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, and pyrene, and trace level detects for benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and pyrene, were qualified using a "J"-flag in affected sample MRS03-APN31038002I-SS002.

Metals by EPA Method 6010B

- MS recoveries were outside control limit for antimony, qualified using a "UJ"-flag, and lead and zinc, qualified using a "J"-flag for MRS03-APN31038002I-SS002. Additionally, lab replicate and lab triplicate RSD were also outside control limits for lead.

Synectics #280-141866-1

Lab Work Order# 280-141866-1 (APN31038002B, APN31038002H)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-10202020, were qualified using a 'J"-flag or a "UJ"-flag. Surrogate recoveries outside the limits for all PAHs in EB-10212020, were qualified using a "UJ"-flag.
- Surrogate recoveries were outside control limits for all PAH 16 analytes analyzed (i.e., 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene) in affected samples MRS03-APN31038002B-SS001 and MRS03-APN31038002B-SS1001. Additionally, column breakdown (pesticide 8270) occurred for all 16 PAH analytes in affected sample MRS03-APN31038002B-SS001. With the exception of benzo(a)pyrene and dibenz(a,h)anthracene, qualified using a "U"-flag (undetected) for detected results, all other analytes in sample MRS03-APN31038002B-SS001 were qualified using a "J"-flag (estimated). With the exception of 2-methylnaphthalene, acenaphthene, anthracene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluoranthene, and naphthalene in sample MRS03-APN31038002B-SS1001, qualified using a "UJ"-flag (undetected estimated) for detected results, all other analytes were qualified using a "J"-flag.
- Trace level detect and column breakdown (pesticide 8270) occurred for 2-methylnaphthalene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene in affected sample MRS03-APN31038002H-SS001, 2-methylnaphthalene, benzo(b)fluoranthene, fluoranthene, fluorene, naphthalene, and pyrene

in affected sample MRS03-APN31038002H-SS002, 2-methylnaphthalene, benzo(b)fluoranthene, chrysene, fluoranthene, fluorene, naphthalene, and pyrene in affected sample MRS03-APN31038002H-SS003, and for naphthalene in affected sample MRS03-APN31038002H-SS1002, all qualified using a "J"-flag.

Metals by EPA Method 6010B

- MS recovery outside control limit for antimony in affected sample MRS03-APN31038002B-SS001 was qualified using a "UJ"-flag for detected result. MS recovery and M2 outside control limit for zinc in affected sample MRS03-APN31038002B-SS001 was qualified using a "J"-flag for detected result.
- MS recovery outside control limits for antimony was qualified using a "UJ"-flag, and MS and M2 recovery outside control limits for zinc was qualified using a "J"-flag in affected sample MRS03-APN31038002H-SS001.

Synectics #280-141927-1

Lab Work Order# 280-141927-1 (APN31038002Q, APN31040005A)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-10222020, were qualified using a "UJ"-flag.
- Surrogate recoveries were outside control limits for all PAH 16 analytes analyzed (i.e., 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene) in affected samples MRS03-APN31040005A-SS001, -SS002, -SS003, -SS1001, -SS1002, and -SS2002. With the exception of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, naphthalene, phenanthrene, and pyrene in sample MRS03-APN31040005A-SS001, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene naphthalene, phenanthrene, and pyrene in sample MRS03-APN31040005A-SS002, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene in sample MRS03-APN31040005A-SS003, qualified using a "J"-flag (undetected estimated) for detected results, all other analytes were qualified using a "UJ"-flag (undetected estimated).

Metals by EPA Method 6010B

- MS recovery outside control limit for antimony in affected sample MRS03-APN31040005A-SS1002 was qualified using a "UJ"-flag for detected result. MS recovery and M2 outside control limit for copper, lead, and zinc in affected sample MRS03-APN31040005A-SS1002 was qualified using a "J"-flag for detected result.

Synectics #280-141995-1

Lab Work Order# 280-141995-1 (APN31040005B)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH 16 analytes analyzed in affected sample MRS03-APN31040005B-SS2002 qualified using a "U"-flag (undetected).
- MS recovery and MS RPD were outside control limits and trace level detect for fluoranthene and MS recovery and MS RPD were outside control limits for pyrene in affected sample MRS03-APN31040005B-SS001, was qualified using a "J"-flag for detected results.

Metals by EPA Method 6010B

- MS recovery outside control limit for antimony in affected sample MRS03-APN31040005B-SS1001 was qualified using a "UJ"-flag for detected result. MS recovery was qualified outside control limit for copper, lead, and zinc in affected sample MRS03-APN31040005B-SS1001 was qualified using a "J"-flag for detected result.

Synectics #280-142106-1

Lab Work Order# 280-142106-1 (APN31040005C, APN31040005D)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH 16 analytes analyzed in affected samples MRS03-APN31040005D-SS003, -SS1002, -SS2001, -SS2002, and -SS2003. With the exception of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene chrysene, fluoranthene, naphthalene, and pyrene in sample MRS03-APN31040005D-SS003, chrysene, fluoranthene, phenanthrene, and pyrene in sample MRS03-APN31040005D-SS1002, and naphthalene in sample MRS03-APN31040005D-SS2003, qualified using a "J"-flag (undetected estimated) for detected results, all other analytes were qualified using a "UJ"-flag.
- MS recovery outside control limit for zinc in affected sample MRS03-APN31040005D-SS003 was qualified using a "J"-flag for detected result. MS recovery and M2 outside control limit for antimony in affected sample MRS03-APN31040005D-SS003 was qualified using a "UJ"-flag for detected result.

Synectics #280-142167-1

Lab Work Order# 280-142167-1 (APN31040005E, APN31040005F)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH 16 analytes analyzed in affected samples MRS03-APN31040005F-SS003, -SS1002, -SS2001, -SS2002, and -SS2003. With the exception of acenaphthene, dibenz(a,h)anthracene, and fluorene in sample MRS03-APN31040005F-SS002, , qualified using a "UJ"-flag for detected results, all other analytes were qualified using a "J"-flag.

Metals by EPA Method 6010B

- MS recovery and M2 outside control limit for antimony in affected sample MRS03-APN31040005E-SS1003 was qualified using a "UJ"-flag for detected result.

Synectics #280-142229-1

Lab Work Order# 280-142229-1 (APN31040005G)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all 16 PAH analytes analyzed in affected samples MRS03-APN31040005G-SS001, -SS002, -SS003, and -SS103. With the exception of acenaphthene, anthracene, dibenz(a,h)anthracene, and fluorene in affected samples MRS03-APN31040005G-SS001, -SS003, and -SS1003, 2-methylnaphthalene, acenaphthene, anthracene, dibenz(a,h)anthracene, and fluorene in affected sample MRS03-APN31040005G-SS002, qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag.

Metals by EPA Method 6010B

- MS and M2 recoveries were outside the limit for antimony, qualified using a "UJ"-flag and zinc, qualified using a "J"-flag in affected sample MRS03-APN31040005G-SS002. MS recovery was outside the limit for lead in affected sample MRS03-APN31040005G-SS002, qualified using a "J"-flag.

Synectics #280-142376-1

Lab Work Order# 280-142376-1 (APN31040005H, APN31040005I)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected sample MRS03-APN31040005H-SS2003. With the exception of 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and naphthalene, qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag.
- Surrogate recoveries were outside control limits for all 16 PAH analytes analyzed in affected samples MRS03-APN31040005I-SS001 and -SS002. With the exception of acenaphthene, anthracene benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, and phenanthrene in affected sample MRS03-APN31040005I-SS001, and dibenz(a,h)anthracene in affected sample MRS03-APN31040005I-SS002, qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag.

Metals by EPA Method 6010B

- MS recovery was outside control limit for antimony, qualified using a "UJ"-flag, and zinc, qualified using a J"-flag for MRS03-APN31040005I-SS001. Additionally, lab replicate and lab triplicate RSD were also outside control limits for lead.

Synectics #280-142491-1

Lab Work Order# 280-142491-1 (APN31040005J)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-11042020 and EB-11052020, were qualified using a "UJ"-flag.
- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31040005J-SS001 through -SS2003. With the exception of benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and naphthalene in affected sample MRS03-APN31040001J-SS001, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, and naphthalene in affected sample MRS03-APN31040001J-SS002, benzo(a)anthracene, benzo(a)pyrene, chrysene, naphthalene, fluoranthene, and pyrene in affected sample MRS03-APN31040001J-SS003, chrysene and naphthalene in affected sample MRS03-APN31040001J-SS1002J, fluoranthene and naphthalene in affected sample MRS03-APN31040001J-SS1003J, naphthalene in affected sample MRS03-APN31040001J-SS2003J qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag.
- LCS recoveries were outside the control limit for acenaphthene in affected samples MRS03-APN31040005J-SS001 through -SS2003 qualified using a "J"-flag for all analytes.

Synectics #280-142540-1

Lab Work Order# 280-142540-1 (APN31040005L)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-11062020, were qualified using a "UJ"-flag.
- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31040005L-SS001 through -SS2003. With the exception of naphthalene in affected samples MRS03-APN31040005L-SS001, -SS003, -SS2001, and 2003, chrysene, fluoranthene, naphthalene, phenanthrene, and pyrene in affected sample MRS03-APN31040005L-SS002, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene in affected sample MRS03-APN31040005L-SS1001 and -SS1002, and 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene in affected sample MRS03-APN31040005L-SS1003, qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag in samples.

Metals by EPA Method 6010B

- Method blank was outside the control limit for copper, qualified using a "U"-flag, and for lead qualified using a "J"-flag in affected sample MRS03-APN31040005L-SS001. Method

blank was outside the control limit for lead qualified using a "J"-flag in affected sample MRS03-APN31040005L-SS002.

Synectics #280-142966-1

Lab Work Order# 280-142966-1 (Thomp Q)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside project limit for acenaphthene, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, naphthalene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS001; for 2-methylnaphthalene and fluorene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS002; for anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS1003; for acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "UJ"-flag in affected sample MRS03-ThompQ-SS2001; and for acenaphthene, anthracene, dibenz(a,h)anthracene, fluoranthene, qualified using a "UJ"-flag, and benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS2003.
- Surrogate recovery and trace detect for 2-methylnaphthalene and fluorene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS001; for 2-methylnaphthalene, acenaphthene, fluorene and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS1003; for 2-methylnaphthalene, benzo(b)fluoranthene, chrysene, fluoranthene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS2001; and for 2-methylnaphthalene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, and phenanthrene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS2003.
- MS recovery was outside project limit for benzo(g,h,i)perylene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS002.
- MS and surrogate recoveries were outside project limits for acenaphthene, anthracene, dibenz(a,h)anthracene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS002.

Metals by EPA Method 6010B

- MS recovery was outside project limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompQ-SS002.
- MS and post spike recoveries were outside project limit for zinc, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS002.

- Lab replicate RPD, lab triplicate RSD, MS and M2 recoveries were outside project limits for lead, qualified using a "J"-flag in affected sample MRS03-ThompQ-SS002.

Synectics #280-143061-1

Lab Work Order# 280-143061-1 (APN31040005M)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for all 16 PAH analytes analyzed in affected samples MRS03-APN31040005M-SS002, -SS003, -SS1001, and -SS2003. With the exception of acenaphthene, anthracene, dibenz(a,h)anthracene, and fluorene, in affected sample MRS03-APN31040005M-SS002 and -SS003 qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag in samples.

Synectics #280-143081-1

Lab Work Order# 280-143081-1 (Thomp A)

PAHs by EPA Method 8270C SIM

- MS RPD recovery was outside the control limit and trace level detect for 2-methylnaphthalene and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompA-SS003.
- Method blank was outside the control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene in affected samples MRS03-ThompA-SS001, -SS002, -SS003, -SS1001, and -SS1003 using a "J"-flag; for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, and indeno(1,2,3-cd)pyrene in affected sample MRS03-ThompA-SS1002 using a "J"-flag; benzo(a)pyrene, chrysene, fluoranthene, and pyrene in affected sample MRS03-ThompA-SS2001 using a "U"-flag and benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene affected samples MRS03-ThompA-SS2002 and -SS2003 using a "U"-flag.

Metals by EPA Method 6010B

- MS recovery was outside the control limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompA-SS001.
- MS RPD and lab triplicate RSD were outside the control limits for lead, qualified using a "J"-flag in affected sample MRS-ThompA-SS001.

Synectics #280-143100-1

Lab Work Order# 280-143100-1 (APN31040005N and APN31040005O)

PAHs by EPA Method 8270C SIM

- MS and MS RPD recoveries were outside control limits for all 16 PAH analytes analyzed (i.e., 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene,

benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene) in affected sample MRS03-APN31040005N-SS002. With the exception of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene were qualified using a "J"-flag (estimated), all other analytes were qualified using a "UJ"-flag (not detected estimated).

- Surrogate recoveries were outside control limits for all PAH analytes analyzed in affected samples MRS03-APN31038002O-SS001 and -SS002. With the exception of acenaphthene, anthracene, dibenz(a,h)anthracene, and fluorene in affected sample MRS03-APN310380020-SS001, and acenaphthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and fluorene in affected sample MRS03-APN31038002O-SS002, were qualified using a "UJ"-flag, , all other analytes were qualified using a "J"-flag.

Metals by EPA Method 6010B

- MS and M2 recoveries were outside control limit for antimony qualified using a "UJ"-flag.
- MS recovery was outside control limit for antimony qualified using a "UJ"-flag for MRS03-APN31040005O-SS1001.

Synectics #280-143422-1

Lab Work Order# 280-143422-1 (Thomp O and Thomp P)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-12012020, were qualified using a "UJ"-flag.
- Surrogate recovery was outside project limit for 2-methylnaphthalene, acenaphthene, anthracene, dibenz(a,h)anthracene, fluoranthene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS002, and -SS003; acenaphthene, anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompN-SS1002; for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1002.
- Surrogate recovery was outside project limit and trace level detect for 2-methylnaphthalene and fluorene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1001; and for 2-methylnaphthalene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1002; for 2-methylnaphthalene, acenaphthene, and fluorene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1003.

- MS RPD and surrogate recoveries were outside project limit for anthracene, benzo(a)pyrene, fluoranthene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1001.
- MS RPD, MS and surrogate recoveries were outside project limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1001.
- MS and surrogate recoveries and trace level detect for acenaphthene and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1001.
- MS RPD recovery was outside for benzo(b)fluoranthene, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1001.
- Surrogate recovery was outside project limit for acenaphthene, anthracene, dibenz(a,h)anthracene, fluoranthene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompP-SS001; for acenaphthene, anthracene, benzo(k)fluoranthene, dibenz(a,h)anthracene, naphthalene, and phenanthrene, qualified using a "J"-flag in affected sample MRS03-ThompP-SS003; for acenaphthene, anthracene benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene, qualified using a "J"-flag in affected samples MRS03-ThompP-SS1001 through -SS1003; for anthracene, dibenz(a,h)anthracene, and fluorene, qualified using a "UJ"-flag samples MRS03-ThompP-SS2002; and for acenaphthene, anthracene, dibenz(a,h)anthracene, and fluorene, qualified using a "UJ"-flag in affected sample MRS03-ThompP-SS2003.
- Surrogate recovery was outside the project limit and trace level detect for 2-methylnaphthalene, qualified using a "J"-flag in affected sample MRS03-ThompP-SS001; for 2-methylnaphthalene and fluorene, qualified using a "J"-flag in affected samples MRS03-ThompP-SS003 and -SS1002; for 2-methylnaphthalene, acenaphthene, and fluorene, qualified using a "J"-flag in affected samples MRS03-ThompP-SS1001 and -SS1003; and for 2-methylnaphthalene, acenaphthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene, qualified using a "J"-flag in affected samples MRS03-ThompP-SS2002 and -SS2003.

<u>Metals by EPA Method 6010B</u>

- MS recovery was outside the project limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompO-SS1001.
- MS and M2 were outside the project limit for zinc, qualified using a "J"-flag in affected sample MRS03-ThompO-SS1001.

- MS recovery was outside the project limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompP-SS1001.
- MS and M2 were outside the project limit for zinc, qualified using a "J"-flag in affected sample MRS03-ThompP-SS1001.

Synectics #280-143489-1

Lab Work Order# 280-143489-1 (Thomp M)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside the project limit for 2-methylnaphthalene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS003.
- MS recovery was outside the control limit for anthracene and dibenz(a,h)anthracene in affected sample MRS03-ThompM-SS1001.
- MS and MS RPD recoveries were outside the control limit for naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS1001.
- MS recovery was outside the control limit and trace detect for naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS1001.

Synectics #280-143717-1

Lab Work Order# 280-143717-1 (Thomp J)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside project limits for in 2-methylnaphthalene, acenaphthene, anthracene, fluorene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS001; for anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS2001; and for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, fluorene, phenanthrene, and pyrene, qualified using a "J"-flag, and fluorene, qualified using a "UJ"-flag, in affected sample MRS03-ThompJ-SS2003.
- Surrogate recovery and trace level detect for 2-methylnaphthalene, acenaphthene, fluorene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS2001; and for 2-methylnaphthalene, acenaphthene, anthracene, dibenz(a,h)anthracene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS2003.

Synectics #280-143881-1

Lab Work Order# 280-143881-1 (APN31038002-SS1003R and Thomp A)

PAHs by EPA Method 8270C SIM

- Method blank were outside the control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, , and pyrene in affected sample MRS03-APN31038002J-SS1003R qualified using a "U"-flag, all analytes.
- MS RPD recovery was outside the control limit and trace level detect for 2-methylnaphthalene and naphthalene, qualified using a "J"-flag (detected) in affected sample MRS03-ThompA-SS003.
- Method blank was outside the control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene in affected samples MRS03-ThompA-SS001, -SS002, -SS003, -SS1001, and -SS1003 using a "J"-flag; for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, and indeno(1,2,3-cd)pyrene in affected sample MRS03-ThompA-SS1002 using a "J"-flag; benzo(a)pyrene, chrysene, fluoranthene, and pyrene in affected sample MRS03-ThompA-SS2001 using a "U"-flag (undetected); and benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene affected samples MRS03-ThompA-SS2002 and -SS2003 using a "U"-flag.

Metals by EPA Method 6010B

- MS recovery was outside the control limit for antimony, qualified using a "UJ"-flag (undetected estimated) in affected sample MRS03-ThompA-SS001.
- MS RPD and lab triplicate RSD were outside the control limits for lead, qualified using a "J"-flag in affected sample MRS-ThompA-SS001.

Synectics #280-144030-1

Lab Work Order# 280-144030-1 (Thomp C)

PAHs by EPA Method 8270C SIM

- MS RPD was outside project limit for benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, and phenanthrene, qualified using a "J"-flag, in affected sample MRS03-ThompC-SS002.
- MS and MS RPD recoveries were outside project limit for benzo(b)fluoranthene, qualified using a "J"-flag in affected sample MRS03-ThompC-SS002.
- MS recovery and trace level detect for dibenz(a,h)anthracene, qualified using a "J"-flag in affected sample MRS03-ThompC-SS002.
- Method blank was outside the control limit for benzo(a)anthracene, chrysene, fluoranthene, and pyrene in affected sample MRS03-ThompC-SS2001 and qualified using a "U"-flag, and for fluoranthene in affected samples MRS03-ThompC-SS2002 and -SS2003.

Metals by EPA Method 6010B

- Lab replicate was outside control limit for lead, qualified using a "J"-flag in affected sample MRS03-ThompC-SS002.
- MS recovery was outside control limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompC-SS002.

Synectics #280-144038-1

Lab Work Order# 280-144038-1 (Thomp B)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside the control limit for fluoranthene, in affected samples MRS03-AThompB-SS001, qualified a "J"-flag, for chrysene, fluoranthene, and pyrene, qualified a "U"-flag in affected sample MRS03-ThompB-SS2002, and for benzo(a)anthracene, chrysene, fluoranthene, and pyrene, qualified a "U"-flag in affected sample MRS03-ThompB-SS2003.

Synectics #280-144368-1

Lab Work Order# 280-144368-1 (Thomp D)

PAHs by EPA Method 8270C SIM

- Lab method blank detected naphthalene, phenanthrene, and pyrene in EB-01052021,qualified using "UJ"-flag.
- Surrogate recoveries outside the limits for PAHs in EB-01062021, were qualified using a "UJ"-flag. Surrogate recoveries outside the limits and method blank for naphthalene and pyrene in EB-01062021, were qualified using a "UJ"-flag.
- MS RPD was outside project limit for benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene, qualified using a "J"-flag in affected sample MRS03-ThompD-SS1001.
- MS and MS RPD recoveries were outside control limit for benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompD-SS1001.
- MS recovery and trace detect was outside control limit for phenanthrene, qualified using a "J"-flag in affected sample MRS03-ThompD-SS1001.
- Surrogate recovery was outside project limits for all PAHs in affected samples MRS03-ThompD-SS1002, -SS1003, -SS2001, and -SS2003. With exception of acenaphthene and fluorene in affected sample MRS03-ThompD-SS1002, qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag. With exception of fluorene in affected sample MRS03-ThompD-SS1003, qualified using a "UJ"-flag, all other analytes were qualified using a "J"-flag. With exception of 2-methylnaphthalene and naphthalene in affected sample MRS03-ThompD-SS2001, qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag. With exception of 2-methylnaphthalene, benzo(g,h,i)perylene, indeno(1,2,3-cd)pyrene, and naphthalene in affected sample

MRS03-ThompD-SS2003, qualified using a "J"-flag, all other analytes were qualified using a "UJ"-flag.

Synectics #280-144426-1

Lab Work Order# 280-144426-1 (Thomp J -SS3001 to -SS4003, Thomp K)

PAHs by EPA Method 8270C SIM

- MS recovery was outside the project limit for 2-methylnaphthalene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.
- MS and MS RPD recoveries were outside the project limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.
- MS and MS RPD recoveries were outside the project limit and trace level detect for naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.
- MS RPD recovery was outside the project limit and trace level detect for anthracene and acenaphthene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.
- Surrogate recovery was outside project limits for 2-methylnaphthalene, acenaphthene, anthracene, fluorene, and naphthalene, qualified using a "J"-flag, in affected samples MRS03-ThompK-SS001; for 2-methylnaphthalene, acenaphthene, fluorene, and naphthalene, qualified using a "J"-flag, in affected samples MRS03-ThompK-SS002, -SS1001, and -SS1002; for anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag, in affected samples MRS03-ThompK-SS2001 and -SS2003; and for anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenanthrene, qualified using a "J"-flag, in in affected sample MRS03-ThompK-SS2002.
- Surrogate recovery and trace level detect for 2-methylnaphthalene, acenaphthene, fluorene, and naphthalene qualified using a "J"-flag, in affected samples MRS03-ThompK-SS2001 through -SS2003.
- MS RPD recovery was outside project limit for 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompK-SS1003.
- MS and MS RPD recoveries were outside project limit for fluorene and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompK-SS1003.

Metals by EPA Method 6010B

- MS recovery was outside project limit for antimony, qualified using a "UJ"-flag, and for lead, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.
- Serial dilution for lead, qualified using a "J"-flag in affected sample MRS03-ThompL-SS1003.
- MS and M2 recoveries were outside project limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompK-SS1003.

Synectics #280-144656-1

Lab Work Order# 280-144656-1 (APN32404589)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for PAHs in EB-01122021, were qualified using a "UJ"-flag. Trace detect of pyrene in EB-01122021 was qualified using a "J"-flag.
- LCS and MS recoveries were outside control limits and trace level detects for benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene in affected sample MRS03-APN32404589-SS001 qualified using a "J"-flag for detected results.
- LCS recovery were outside control limits and trace level detects for benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene in affected samples MRS03-APN32404589-SS002, -SS003, and -SS1001, qualified using a "J"-flag for detected results. LCS recovery were outside control for benzo(a)pyrene and dibenz(a,h)anthracene in affected samples MRS03-APN32404589-SS002, -SS003, and -SS1001, qualified using a "UJ"-flag for detected results.
- LCS recovery were outside control for benzo(a)pyrene and dibenz(a,h)anthracene in affected sample MRS03-APN32404589-SS001, -SS002, -SS003; benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene in affected samples MRS03-APN32404589-SS1001; benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene in affected samples MRS03-APN32404589-SS1002, -SS1003, and -SS2001, -SS2002, and -SS2003, qualified using a "UJ"-flag for detected results.

Metals by EPA Method 6010B

- MS and M2 recoveries were outside recovery limit for antimony in affected sample MRS03-APN32404589-SS001, qualified using a "UJ"-flag for detected results, and MS recovery was outside recoveries for copper and zinc, qualified using a "J"-flag for detected results.

Synectics #280-144714-1

Lab Work Order# 280-144714-1 (Thomp E)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for PAHs in EB-01152021, were qualified using a "UJ"-flag. Trace detect of naphthalene in EB-01152021 was qualified using a "J"-flag.

- MS RPD was outside project limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompE-SS002.

- MS RPD and trace level detect was outside project limit for phenanthrene, qualified using a "J"-flag in affected sample MRS03-ThompE-SS002.

- Surrogate recovery was outside project limit for all 16 PAHs in affected samples MRS03-ThompE-SS2001, -SS2002, and -SS2003. With the exception of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene, qualified using a "J"-flag in affected samples MRS03-ThompE-SS2001 and -SS2002, all other analytes were qualified using a "U"-flag. With the exception of chrysene and naphthalene qualified using a "J"-flag in affected sample MRS03-ThompE-SS2003, all other analytes were qualified using a "U"-flag.

Metals by EPA Method 6010B

- MS recovery was outside control limit for antimony, qualified using a "UJ"-flag, and MS and M2 recoveries were outside control limit for zinc, qualified using a "J"-flag, in affected sample MRS03-ThompE-SS002.

Synectics #280-144869-1

Lab Work Order# 280-144869-1 (APN32404126)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries and/or trace level detect and surrogate recoveries were outside control limits for all PAH 16 analytes analyzed in affected samples MRS03-APN32404126-SS001, -SS002, and –SS1001. With the exception of acenaphthene, anthracene, and dibenz(a,h)anthracene in sample MRS03-APN32404126-SS001, acenaphthene and anthracene in sample MRS03-APN APN32404126-SS002, and acenaphthene, anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and dibenz(a,h)anthracene, in sample MRS03-APN32404126-SS1001 qualified using a "UJ"-flag for detected results, all other analytes were qualified using a "J"-flag.

Synectics #280-144870-1

Lab Work Order# 280-144870-1 (APN32404131)

Metals by EPA Method 6010B

- MS and M2 recoveries were outside the limit for antimony, qualified rejected and lead and zinc, qualified using a "J"-flag in affected sample MRS03-APN32404131-SS2001.

Synectics #280-144900-1

Lab Work Order# 280-144900-1 (Thomp F)

PAHs by EPA Method 8270C SIM

- LCS recovery for acenaphthene, benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene, and phenanthrene qualified using a 'UJ"-flag, were outside project limits for EB-01212021 and EB01222021.
- MS and MSD recovery for acenaphthene, anthracene, benzo(k)fluoranthene, and phenanthrene, qualified using a "J"-flag for antimony and using a "J"-flag in affected sample MRS03-ThompF-SS001.
- MS RPD recovery was outside control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene, qualified using a "J"-flag for antimony and using a "J"-flag in affected sample MRS03-ThompF-SS001.
- Surrogate recovery was outside the control limit for benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompF-SS002 and -SS003; and acenaphthene, anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, and phenanthrene, qualified using a "UJ"-flag in affected sample MRS03-ThompF-SS2003.
- Surrogate recovery and trace detect was outside the control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompF-SS2003.
- Method blank was outside the control limit for naphthalene, qualified using a "U"-flag in affected sample MRS03-ThompF-SS002, -SS1001, -SS1002, -SS1003, -SS2001, and -SS2002.
- Method blank and surrogate recovery was outside the control limit for naphthalene, qualified using a "UJ"-flag in affected sample MRS03-ThompF-SS2003.

Metals by EPA Method 6010B

- MS recovery was outside control limit for zinc qualified using a "J"-flag, and MS and M2 recoveries were outside control limit for antimony, qualified using a "J"-flag, in affected sample MRS03-ThompF-SS001.

Synectics #280-145283-1

Lab Work Order# 280-145283-1 (APN32436017)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside control limits for 2-methylnaphthalene and fluorene and fluoranthene qualified using a "J"-flag for detected results, in affected sample MRS03-APN32436017-SS001.

Synectics #280-145284-1

Lab Work Order# 280-145284-1 (Thomp M -SS3001-SS4003)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside the project limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS3001.
- Surrogate recovery was outside the project limit and trace level detect for 2-methylnaphthalene, acenaphthene, anthracene, dibenz(a,h)anthracene, naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS3001; for anthracene and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS3001; for naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS4001.

Metals by EPA Method 6010B

- MS recovery was outside the control limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompM-SS4001.

Synectics #280-145325-1

Lab Work Order# 280-145325-1 (APN32405106)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside control limits for 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, and phenanthrene qualified using a "UJ"-flag (undetected estimated) in affected sample MRS03-APN32405106-SS1001; and acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "UJ"-flag in affected sample MRS03-APN32405106-SS2001.
- Surrogate recovery was outside control limits and trace level detects for benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, naphthalene, and pyrene, qualified using a "J"-flag (estimated) in affected sample MRS03-APN32405106-SS1001; and 2-methylnaphthalene and naphthalene qualified using a "J"-flag in affected sample MRS03-APN32405106-SS2001.
- Surrogate recovery was outside the control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene,

fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag, and acenaphthene and fluorene, qualified using a "UJ"-flag in affected sample MRS03-APN32405107-SS001; and for acenaphthene, anthracene, dibenz(a,h)anthracene, fluorene, and phenanthrene, qualified using a "UJ"-flag in affected sample MRS03-APN32405107-SS1003.

- Surrogate recoveries were outside control limits and trace level detect for 2-methylnaphthalene, anthracene, dibenz(a,h)anthracene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-APN32405107-SS001; and 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, and pyrene, qualified using a "J"-flag in affected sample MRS03-APN32405107-SS1003.
- MS recovery was outside the control limit for lead, qualified using a "J"-flag, and for antimony, qualified using a "UJ"-flag in affected sample MRS03-APN32405107-SS1003. MS and Post spike recovery were outside the control limit for zinc, qualified using a "J"-flag in in affected sample MRS03-APN32405107-SS1003.

Synectics #280-145479-1

Lab Work Order# 280-145479-1 (Thomp G, APN32404194, APN32436030, APN32439038)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside the limits for all PAHs in EB-02102021, were qualified using a "UJ"-flag. Surrogate recoveries and trace detect of benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and pyrene in EB-02122021 was qualified using a "J"-flag. Surrogate and LCS recoveries and RPD values and trace detection of benzo(g,h,i)perylene and dibenz(a,h)anthracene in EB-02122021 was qualified using a "J"-flag.
- Method blank was outside the control limit for naphthalene, qualified using a "U"-flag in affected sample MRS03-ThompG-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2002.
- Surrogate recoveries were outside control limits for all PAH 16 analytes analyzed (i.e., 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene) in affected samples MRS03-APN324-04-94-SS1002. With the exception of 2-methylnaphthalene, benzo(a)pyrene, and fluoranthene in sample MRS03-APN32404194-SS1002, qualified using a "J"-flag for detected results, all other analytes were qualified using a "UJ"-flag.
- Method blank was outside the control limit for naphthalene, qualified using a "U"-flag in affected samples MRS03-APN32404194-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, and -SS2003.

- MS recovery was outside control limit for antimony, qualified "UJ" and zinc, qualified using a "J" in affected sample MRS03-APN32436030-SS2001.

Synectics #280-145601-1

Lab Work Order# 280-145601-1 (Thomp K-SS3001 – SS4003, APN32436028)

- LCS recovery for benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene qualified using a 'UJ"-flag, were outside project limits for EB-02172021A and EB-02172021B.

Metals by EPA Method 6010B

- MS recovery were outside control limit for benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene, qualified using "J"-flag in affected sample MRS03-APN32436028-SS1002.
- MS recovery was outside control limit for antimony, qualified using "UJ"-flag in affected sample MRS03-APN32436028-SS1002.

Synectics #280-145687-1

Lab Work Order# 280-145687-1 (APN32405166A)

- Sample EB-02182021 was prepared outside of preparation holding time. Sample results were qualified using "UJ".

Metals by EPA Method 6010B

- MS recovery was outside the control limit for zinc, qualified as "J"-flag and antimony, qualified at "UJ"-flag in affected sample MRS03-APN32405166A-SS1001.
- Method blank was outside the control limit for copper, qualified as "U"-flag in affected samples MRS03-APN32405166A-SS1001, -SS1002, and -SS2001 through -SS2003.

Synectics #280-145689-1

Lab Work Order# 280-145689-1 (Thomp I)

- Sample EB-02192021 was prepared outside of preparation holding time. Sample results were qualified using "UJ".

Metals by EPA Method 6010B

- Lab detect was outside the project limit for copper, qualified using a "U"-flag in affected samples MRS03-ThompI-SS1001, and 2001 through 2003.

Synectics #280-145809-1

Lab Work Order# 280-145809-1 (APN32404588)

- RPD values and trace detection of naphthalene in EB-02252021 were qualified using a "J".

Metals by EPA Method 6010B

- MS recovery was outside control limits for antimony, qualified using a "UJ"-flag in affected sample MRS03-APN32404588-SS1002.
- MS and M2 recoveries were outside for lead, qualified using a "J"-flag in affected sample MRS03-APN32404588-SS1002.

Synectics #280-145850-1

Lab Work Order# 280-145850-1 (Thomp H)

- RPD values and trace detection of phenanthrene in sample EB-02262021 were qualified using a "J".

PAHs by EPA Method 8270C SIM

- MS RPD recovery was outside the project limit for anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompH-SS002.

Metals by EPA Method 6010B

- Lab replicate RPD recovery was outside the project limit for lead, qualified using a "J"-flag in affected sample MRS03-ThompH-SS002.
- Lab replicate RPD and MS recoveries were outside the project limit for zinc, qualified using a "J"-flag in affected sample MRS03-ThompH-SS002.
- MS recovery was outside the project limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompH-SS002.

Synectics #280-146043-1

Lab Work Order# 280-146043-1 (Thomp M-SS5001 – SS6003)

PAHs by EPA Method 8270C SIM

- Surrogate recovery was outside the project limit for 2-methylnaphthalene, acenaphthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS5002.
- MS and MS RPD recoveries were outside the control limit for naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS1001; and for benzo(a)pyrene and

benzo(b)fluoranthene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS6002.

- MS, MS RPD recoveries were outside the control limit and trace level detect for naphthalene was qualified using a "J"-flag in affected sample MRS03-ThompM-SS6002.
- MS RPD recovery was outside the control limit and trace detect for dibenz(a,h)anthracene in affected sample MRS03-ThompM-SS6002.
- MS RPD recovery was outside the control limit for benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompM-SS6002.

Metals by EPA Method 6010B

- MS and M2 recoveries were outside the control limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompM-SS6002.

Synectics #280-146074-1

Lab Work Order# 280-146074-1 (Thomp L-SS3001 – SS4003)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside the project limit for acenaphthene, anthracene, fluoranthene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompL-SS2001.

Metals by EPA Method 6010B

- MS and post spike recoveries were outside the project limit for antimony, qualified using a "J"-flag in affected sample MRS03-ThompL-SS1001.

Synectics #280-146092-1

Lab Work Order# 280-146092-1 (Thomp J-SS3001 – SS4003)

- Surrogate recoveries were outside the limits for all PAHs qualified using a "UJ"-flag analyzed with exception of naphthalene in EB-03022021. Surrogate recovery were outside the limits and method blank for naphthalene, qualified using a "UJ"-flag.

PAHs by EPA Method 8270C SIM

- MS recovery was outside the project limit for 2-methylnaphthalene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.
- MS and MS RPD recoveries were outside the project limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene,

chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.

- MS and MS RPD recoveries were outside the project limit and trace level detect for naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.
- MS RPD recovery was outside the project limit and trace level detect for anthracene and acenaphthene, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.

Metals by EPA Method 6010B

- MS recovery was outside project limit for antimony, qualified using a "UJ"-flag, and for lead, qualified using a "J"-flag in affected sample MRS03-ThompJ-SS3002.

Synectics #280-146287-1

Lab Work Order# 280-146287-1 (Thomp K-SS5001 – SS6003)

PAHs by EPA Method 8270C SIM

- MS and MS RPD recoveries were outside project limit for fluorene and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompK-SS1003; and for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompK-SS5003.
- MS and MS RPD recoveries were outside project limit and trace level detect for anthracene and dibenz(a,h)anthracene, qualified using a "J"-flag in affected sample MRS03-ThompK-SS5003.

Metals by EPA Method 6010B

- Serial dilution for lead, qualified using a "J"-flag in affected sample MRS03-ThompK-SS1003.
- MS and M2 recoveries were outside project limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-ThompK-SS6003.
- MS recovery was outside the project limit for zinc, qualified using a "J"-flag in affected sample MRS03-ThompK-SS6003.

Synectics #280-146295-1

Lab Work Order# 280-146295-1 (APN 32404152_153, APN32404549A)

Metals by EPA Method 6010B

- Method blank detect of copper, qualified using a "U"-flag in affected samples MRS03-APN32404152_153-SS2001 and -SS2003.
- MS recovery was outside the control limit for antimony, qualified using a "UJ"-flag in affected sample MRS03-APN32404152_153-SS2003.

- MS recovery and post spike recovery were outside the control limit for zinc, qualified using a "J"-flag in affected samples MRS03-APN32404152_153-SS2003.

- Interference check were outside control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene, qualified using a "J"-flag (estimated) in affected sample MRS03-APN32404549A-SS002; and 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "UJ"-flag (undetected estimated) in affected sample MRS03-APN32404549A-SS2001.

- Interference check outside control limit and trace level detect for 2-methylnaphthalene, acenaphthene, anthracene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, naphthalene, and phenanthrene, qualified using a "J"-flag in affected sample MRS03-APN32404549A-SS002; and for naphthalene, qualified using a "J"-flag (estimated) in affected sample MRS03-APN32404549A-SS2001.

Synectics #280-146991-1

Lab Work Order# 280-146991-1 (APN 32436017-SS3001-SS4003)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside the limits for all PAHs, qualified using a "UJ"-flag in EB-03312021.

- Surrogate recoveries were outside control limits for 2-methylnaphthalene and fluorene and fluoranthene qualified using a "J"-flag for detected results, in affected sample MRS03-APN32436017-SS001.

Synectics #280-146993-1

Lab Work Order# 280-146993-1 (APN32404082B)

Metals by EPA Method 6010B

- MS recovery was outside control limits for antimony, qualified using "UJ"-flag in affected sample MRS03-APN32404082B-SS1002.

Synectics #280-147003-1

Lab Work Order# 280-147003-1 (ThompL-SS5001-SS6003)

- Holding time was outside limits for sample EB-04022021.

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside the project limit for acenaphthene, anthracene, fluoranthene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompL-SS2001.
- Trace level detect for 2-methylnaphthalene, qualified using a "J"-flag in affected sample MRS03-ThompL-SS5001; for 2-methylnaphthalene and fluorene, and naphthalene, qualified using a "J"-flag in affected sample MRS03-ThompL-SS5002; for 2-methylnaphthalene, acenaphthene, fluorene, and naphthalene qualified using a "J"-flag in affected sample MRS03-ThompL-SS6002; and for 2-methylnaphthalene and fluorene, qualified using a "J"-flag in affected sample MRS03-ThompL-SS6003.
- MS recovery was outside the project limit for benzo(a)pyrene, benzo(b)fluoranthene, fluoranthene, and pyrene, qualified using a "J"-flag in affected sample MRS03-ThompL-SS6001.
- MS and MS RPD recoveries were outside the project limit for anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenanthrene, qualified using a "J"-flag in affected sample MRS03-ThompL-SS6001.
- MS and MS RPD recoveries and trace level detect for 2-methylnaphthalene, acenaphthene, fluorene, and naphthalene qualified using a "J"-flag in affected sample MRS03-ThompL-SS6001.

Metals by EPA Method 6010B

- MS and M2 recoveries were outside the project limit for antimony, qualified using a "J"-flag in affected sample MRS03-ThompL-SS1001, and qualified using a "UJ"-flag in affected sample MRS03-ThompL-SS6001.

Synectics #280-147276-1

Lab Work Order# 280-147276-1 (APN32427024)

PAHs by EPA Method 8270C SIM

- Sample receipt temperature was outside the project limit for 2-methylnaphthalene, acenaphthene, anthracene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, and phenanthrene, qualified using a "UJ"-flag in affected samples MRS03-APN32427024-SS001.
- Sample receipt temperature was outside the project limit and trace level detect for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene, qualified using a "J"-flag in affected samples MRS03-APN32427024-SS001.

- Surrogate recovery was outside the project limit and trace level detect for 2-methylnaphthalene, acenaphthene, anthracene, dibenz(a,h)anthracene, fluorene, naphthalene, qualified using a "UJ"-flag in affected samples MRS03-APN32427024-SS002; for 2-methylnaphthalene, acenaphthene, anthracene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene, qualified using a "UJ"-flag in affected sample MRS03-APN32427024-SS003; for 2-methylnaphthalene, acenaphthene, anthracene, benzo(g,h,i)perylene, benz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, and naphthalene, qualified using a "UJ"-flag (estimated) in affected sample MRS03-APN32427024-SS1001; for 2-methylnaphthalene, acenaphthene, anthracene, benzo(k)fluoranthene, dibenz(a,h)anthracene, fluorene, naphthalene, and phenanthrene, qualified using a "UJ"-flag in affected sample MRS03-APN32427024-SS1002; for all 16 PAHs, qualified using a "UJ"-flag in affected samples MRS03-APN32427024-SS1003,-SS2001; and -SS2003; and for -methylnaphthalene, acenaphthene, anthracene, fluorene, and phenanthrene, qualified using a "UJ"-flag in affected sample MRS03-APN32427024-SS002.
- Surrogate recovery and sample receipt temperature was outside the project limit, and and trace level detect for benzo(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-APN32427024-SS002; for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, and fluoranthene, qualified using a "J"-flag in affected samples MRS03-APN32427024-SS003; for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-APN32427024-SS1001; for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene, qualified using a "J"-flag in affected sample MRS03-APN32427024-SS1002; and for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, and pyrene, qualified using a "J"-flag in affected sample MRS03-APN32427024-SS2001.

<u>Metals by EPA Method 6010B</u>

- Sample receipt temperature was outside the project limit for antimony, qualified using a "UJ"-flag, in affected samples MRS03-APN32427024-SS001 through -SS003, and SS1001, and for copper, lead, and zinc, qualified using a "J"-flag in affected samples MRS03-APN32427024-SS001 through -SS003, -SS1001 through -SS1003, and -SS2001 through -SS2003.
- MS recovery and sample receipt temperature was outside the project limit for antimony, qualified using a "UJ"-flag, in affected samples MRS03-APN32427024-SS1002, -SS1003, and -SS2001 through -SS2003.

Synectics #280-147317-1

Lab Work Order# 280-147317-1 (APN32404663A, Thomp J-SS5001-SS6003)

- Sample EB-04062021 was received outside of the holding time due to commercial carrier shipping delay.

PAHs by EPA Method 8270C SIM

- MS recovery was outside the control limit for acenaphthene and fluorene, qualified using a "UJ"-flag in affected sample MRS03-APN32404663A-SS2003.
- MS RPD recovery was outside the control limit and trace level detect for benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene, qualified using a "UJ"-flag in affected sample MRS03-APN32404663A-SS2003.
- MS and MS RPD recoveries were outside the control limit and trace level detect for naphthalene, qualified using a "UJ"-flag in affected sample MRS03-APN32404663A-SS2003.

Metals by EPA Method 6010B

- MS and M2 recoveries were outside the control limit for antimony, qualified using a "UJ"-flag and lead, qualified using a "J"-flag, in affected sample MRS03-APN32404663A-SS2003.

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B5.0 DATA VALIDATION RESULTS

Analytical data collected at the Former Skeet Range MRS03, Kingman GTG Gunnery Range remedial investigation activities were reviewed and validated by Synectics in Sacramento, California. Data validation was conducted in accordance with *Quality Systems Manual for Environmental Laboratories, version 5.1* (DoD, 2017), DoD *General Data Validation Guidelines* (DoD, 2018a), DoD *Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (SW-846 8260, 8270)* (DoD, 2018b), and laboratory method blank data evaluation for metals analysis based on the DoD *Module 2: Data Validation Procedure for Metals by ICP-OES (SW-846 6010)* (DoD, 2018c), and the QA/QC criteria specified in the Final QAPP Addendum (NOREAS, 2018), Field Change Form Request (FCRF)-001 (NOREAS, 2019a), and FCRF-002 (NOREAS, 2019b).

This assessment has been made through a combination of automated data review (ADR) and supplemental manual review. Data were subjected to a combination of 90 percent Stage 3 Validation Electronic and Manual (S3VEM) and 10 percent Stage 4 Validation Electronic and Manual (S4VEM), involving manual re-quantifications and recalculations from instrument output. Hard copy data summary forms have also been reviewed and compared to the automated review output during validation. Additional manual review was implemented to supplement the ADR review to achieve a higher-level validation of Stage 3. Data validation included a review of sample preservation/condition, cooler temperature, verification of analytes, methods, quantitation, reporting limits, and technical holding times; gas chromatography/mass spectrometer (GC/MS) instrument tune, initial and continuing calibration verifications; laboratory blanks; ICP Interference Check Samples (metals), surrogates, LCS and MS/MSD; and field QC sample data (as applicable). In addition, field sampling records were reviewed to assess the potential for any field conditions that adversely impact data quality. Relevant data validation qualifiers applied during data validation are defined as follows:

- U (Undetected) – The analyte was analyzed for, but not detected.
- UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
- J (Estimated) – Estimated: The analyte was positively identified; the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria
- R - The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.

With the exception of five analytes qualified with “R”, as identified in Section 4.0, third-party validation reports indicated that data associated with samples collected during the soil sampling from January 2020 through April 2021 are usable and acceptable with the appropriate data qualifiers. Overall precision and accuracy goals identified in the project Final QAPP Addendum

were met. The analytical results and associated data validation qualifiers associated with the QC excursions are provided for key constituents of concern in Section C4.0 and in Tables 6-4 through 6-6 in the Remedial Investigation Addendum. The majority of the QC excursions were related to matrix interference caused by soil samples, laboratory blank artifacts, laboratory control standard exceedances caused by poor performing analytes. Holding time exceedances were minimal and related to unforeseen laboratory processing limitations. As the source of the contaminants of concern are from solid-phase skeet particles and shot pellets, potential volatilization losses from holding time exceedances are not considered to significantly affect data usability. Copies of the analytical laboratory reports, including CoC forms and data validation reports, are provided in Attachment 1 as a part of the parcel reports.

Data validation reported recoveries were outside the project acceptance limits in three parcels sampled. Samples for APN 324-37-019-SS002 for 2-methylnaphthalene, fluorene, and naphthalene, and APN 324-04-131-SS2001 and APN 324-36-030-SS2001 for antimony, resulted in the rejection of data in five sample points. Surrogate recoveries were outside the project limit for 2-methylnaphthalene, fluorene, and naphthalene. The anomaly for antimony is likely related to the limitations in the digestion procedure used for ICP analysis coupled with sample matrix effect resulting in lower antimony recoveries in matrix spike sample analysis. As 2-methylnaphthalene, fluorene, and naphthalene antimony are not considered primary risk-drivers for the Site, this data quality issue should not impact remediation decisions for the Site. However, rejected data were not used for decision making purposes.

Overall, project data quality objectives were met, and the data were deemed acceptable. A total of 5 data out of the 16,680 data points (sample, field QC samples and resampled 2019 parcels[2]) reported are qualified rejected (0.03%), a Data Quality Objective (DQO) of 99.97% acceptance rate.. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the limit of quantitation, are not counted as qualified results in the above count.

Analytical results are presented in Tables 6-4 through 6-6 in the RI Addendum Report. The chain-of-custody records, laboratory analytical results, and data validation reports including Data Review Checklists are provided as a part of the parcel reports in Attachment 1.

[2] Seven parcels (APN 324-04-558, APN 324-04-668, APN 324-05-265, APN 324-05-267, APN 324-37-017, APN 324-39-020, and APN 324-05-263A) with rejected data from 2019 RI sampling activities, were resampled during the RI Addendum.

B6.0 REFERENCES

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TABLE

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-01212020	EB-01222020	EB-01232020	EB-01242020	EB-01282020	EB-01292020A	EB-01292020B	EB-01302020	EB-01312020	EB-02112020	EB-02122020	EB-02132020
Date	1/21/2020	1/22/2020	1/23/2020	1/24/2020	1/28/2020	1/29/2020	1/29/2020	1/30/2020	1/31/2020	2/11/2020	2/12/2020	2/13/2020
2-Methylnaphthalene	0.0123 U	0.0121 U	0.0121 U	0.0118 U	0.0118 U	0.0119 U	0.0123 U	0.0121 U	0.0121 U	0.0117 U	0.0118 U	0.0122 U
Acenaphthene	0.0309 U	0.0304 U	0.0303 U	0.0295 U	0.0295 U	0.0298 U	0.0308 U	0.0302 U	0.0301 U	0.0293 U	0.0294 U	0.0305 U
Anthracene	0.0412 U	0.405 U	0.404 U	0.393 U	0.393 U	0.398 U	0.0411U	0.0403 U	0.0402 U	0.0391 U	0.0392 U	0.0406 U
Benzo(a)anthracene	0.103 U	0.0405 U	0.0404 UJ	0.0393 UJ	0.0393 UJ	0.0398 UJ	0.0411U	0.0403 U	0.0402 U	0.0391 U	0.0392 U	0.0406 U
Benzo(a)pyrene	0.0123 U	0.0121 U	0.0121 U	0.0118 U	0.0118 U	0.0119 U	0.0123 U	0.0121 U	0.0121 U	0.0117 U	0.00588 J	0.0122 U
Benzo(b)fluoranthene	0.0412 U	0.0405 U	0.0404 U	0.393 U	0.393 U	0.398 U	0.0411 U	0.0403 U	0.0402 U	0.0391 U	0.0392 U	0.0406 U
Benzo(g,h,i)perylene	0.0206 U	0.0202 U	0.0202 U	0.0196 U	0.0197 U	0.0199 U	0.0205 U	0.0201 U	0.0201 U	0.0195 U	0.0196 U	0.0203 U
Benzo(k)fluoranthene	0.0412 U	0.0405 U	0.0404 U	0.0393 U	0.0393 U	0.0398 U	0.0411 U	0.0403 U	0.0402 U	0.0391 U	0.0392 U	0.0406 U
Chrysene	0.103 U	0.101 U	0.404 U	0.393 U	0.393 U	0.398 U	0.0411 U	0.0403 U	0.0402 U	0.0391 U	0.0392 U	0.0406 U
Dibenz(a,h)anthracene	0.0123 U	0.0121 U	0.0121 U	0.0118 U	0.0118 U	0.0119 U	0.0123 U	0.0121 U	0.0121 U	0.0117 U	0.0118 U	0.0122 U
Fluoranthene	0.103 U	0.101 U	0.101 U	0.0982 U	0.0983 U	0.0995 U	0.103 U	0.101 U	0.100 U	0.0977 U	0.0979 U	0.102 U
Fluorene	0.0412 U	0.0405 U	0.0404 U	0.0393 U	0.0393 U	0.0398 U	0.0411 U	0.0403 U	0.0402 U	0.0391 U	0.0392 U	0.0406 U
Indeno(1,2,3-c,d)pyrene	0.0206 U	0.0202 U	0.0202 U	0.0196 U	0.0197 U	0.0199 U	0.0205 U	0.0201 U	0.0201 U	0.0195 U	0.0196 U	0.0203 U
Naphthalene	0.0123 U	0.0121 U	0.0121 U	0.0118 U	0.0118 U	0.0119 U	0.0123 U	0.0121 U	0.0121 U	0.0117 U	0.0118 U	0.0122 U
Phenanthrene	0.103 U	0.101 U	0.202 U	0.0196 U	0.0197 U	0.0199 U	0.0205 U	0.0201 U	0.0201 U	0.0195 U	0.0196 U	0.0203 U
Pyrene	0.103 U	0.101 U	0.202 U	0.0196 U	0.0197 U	0.0193 U	0.0165 J	0.0201 U	0.0201 U	0.0195 U	0.0196 U	0.0203 U
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U
Copper	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	4.35 J
Lead	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	2.93 J	3.86 J
Zinc	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-02132020A	EB-02142020	EB-02182020	EB-02192020	EB-20200220	EB-02212020	EB-02252020	EB-02262020	EB-02272020	EB-02282020	EB-03032020
Date	2/13/2020	2/14/2020	2/18/2020	2/19/2020	2/20/2020	2/21/2020	2/25/2020	2/26/2020	2/27/2020	2/28/2020	3/3/2020
2-Methylnaphthalene	0.0125 U	0.0122 U	0.0126 U	0.0127 U	0.0129 U	0.0129 UJ	0.0127 UJ	0.0116 UJ	0.0123 UJ	0.0121 UJ	0.0121 U
Acenaphthene	0.0312 U	0.0305 U	0.0314 U	0.0317 U	0.0322 U	0.0322 UJ	0.0316 UJ	0.0290 UJ	0.0307 UJ	0.0302 UJ	0.0302 U
Anthracene	0.0417 U	0.0407 U	0.0418 U	0.0423 U	0.0429 U	0.0430 UJ	0.0422 UJ	0.0386 UJ	0.0410 UJ	0.0403 UJ	0.0403 U
Benzo(a)anthracene	0.0417 U	0.0407 U	0.0418 U	0.0423 U	0.0429 U	0.0430 UJ	0.0422 UJ	0.0386 UJ	0.0410 UJ	0.0403 UJ	0.0403 U
Benzo(a)pyrene	0.0125 U	0.0122 U	0.0126 U	0.0127 U	0.0129 U	0.0129 UJ	0.0127 UJ	0.0116 UJ	0.0123 UJ	0.0121 UJ	0.0121 U
Benzo(b)fluoranthene	0.0417 U	0.0407 U	0.0418 U	0.0423 U	0.0429 U	0.0430 UJ	0.0422 UJ	0.0386 UJ	0.0410 UJ	0.0403 UJ	0.0403 U
Benzo(g,h,i)perylene	0.0208 U	0.0203 U	0.0209 U	0.0212 U	0.0215 U	0.0215 UJ	0.0211 UJ	0.0193 UJ	0.0205 UJ	0.0201 UJ	0.0202 U
Benzo(k)fluoranthene	0.0417 U	0.0407 U	0.0418 U	0.0423 U	0.0429 U	0.0430 UJ	0.0422 UJ	0.0386 UJ	0.0410 UJ	0.0403 UJ	0.0403 U
Chrysene	0.0417 U	0.0407 U	0.0418 U	0.0423 U	0.0429 U	0.0430 UJ	0.0422 UJ	0.0386 UJ	0.0410 UJ	0.0403 UJ	0.0403 U
Dibenz(a,h)anthracene	0.0125 U	0.0122 U	0.0126 U	0.0127 U	0.0129 U	0.0129 UJ	0.0127 UJ	0.0116 UJ	0.0123 UJ	0.0121 UJ	0.0121 U
Fluoranthene	0.104 U	0.102 U	0.105 U	0.106 U	0.107 U	0.107 UJ	0.105 UJ	0.0965 UJ	0.102 UJ	0.101 UJ	0.101 U
Fluorene	0.0417 U	0.0407 U	0.0418 U	0.0423 U	0.0429 U	0.0430 UJ	0.0422 UJ	0.0386 UJ	0.0410 UJ	0.0403 UJ	0.0403 U
Indeno(1,2,3-c,d)pyrene	0.0208 U	0.0203 U	0.0209 U	0.0212 U	0.0215 U	0.0215 UJ	0.0211 UJ	0.0193 UJ	0.0205 U	0.0201 U	0.0202 U
Naphthalene	0.0125 U	0.0122 U	0.0126 U	0.0127 U	0.0129 U	0.0129 UJ	0.0127 UJ	0.0116 UJ	0.0123 UJ	0.0121 UJ	0.0121 U
Phenanthrene	0.0208 U	0.0203 U	0.0209 U	0.0212 U	0.0215 U	0.0215 UJ	0.0211 UJ	0.0193 UJ	0.0178 J	0.0201 UJ	0.0202 U
Pyrene	0.0208 U	0.0203 U	0.0209 U	0.0212 U	0.0215 U	0.0215 UJ	0.0211 UJ	0.0193 UJ	0.0205 UJ	0.0201 UJ	0.0202 U
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U
Copper	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Lead	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U
Zinc	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-03042020	EB-03052020	EB-03062020	EB-09152020	EB-09162020	EB-09172020	EB-09182020	EB-09222020	EB-09222020B	EB-09222020E	EB-09232020L	EB-09232020M
Date	3/4/2020	3/5/2020	3/6/2020	9/6/2020	9/16/2020	9/17/2020	9/18/2020	9/22/2020	9/22/2020	9/22/2020	9/23/2020	9/23/2020
2-Methylnaphthalene	0.0128 U	0.0126 U	0.0125 U	0.0131 U	0.0122 U	0.0123 U	0.0122 U	0.0121 U	0.0124 U	0.0124 U	0.0124 U	0.0129 U
Acenaphthene	0.0302 U	0.0315 U	0.0312 U	0.0328 U	0.0304 U	0.0307 U	0.0305 U	0.0302 U	0.0309 U	0.0311 U	0.0310 U	0.0322 U
Anthracene	0.0426 U	0.0420 U	0.0416 U	0.0438 U	0.0406 U	0.0409 U	0.0406 U	0.0402 U	0.0412 U	0.0415 U	0.0413 U	0.0429 U
Benzo(a)anthracene	0.0426 U	0.0420 U	0.0416 U	0.0438 U	0.0406 U	0.0409 U	0.0406 U	0.0402 U	0.0412 U	0.0415 U	0.0413 U	0.0429 U
Benzo(a)pyrene	0.0128 U	0.0126 U	0.0125 U	0.0131 U	0.0122 U	0.0123 U	0.0122 U	0.0121 U	0.0124 U	0.0124 U	0.0124 U	0.0129 U
Benzo(b)fluoranthene	0.0426 U	0.0420 U	0.0416 U	0.0438 U	0.0406 U	0.0409 U	0.0406 U	0.0402 U	0.0412 U	0.0415 U	0.0215 U	0.0429 U
Benzo(g,h,i)perylene	0.0213 U	0.0210 U	0.0208 U	0.0219 U	0.0203 U	0.0205 U	0.0203 U	0.0201 U	0.0206 U	0.0207 U	0.0206 U	0.0215 U
Benzo(k)fluoranthene	0.0426 U	0.0420 U	0.0416 U	0.0438 U	0.0406 U	0.0409 U	0.0406 U	0.0402 U	0.0412 U	0.0415 U	0.0413 U	0.0429 U
Chrysene	0.0426 U	0.0420 U	0.0416 U	0.0438 U	0.0406 U	0.0409 U	0.0406 U	0.0402 U	0.0412 U	0.0415 U	0.0413 U	0.0429 U
Dibenz(a,h)anthracene	0.0128 U	0.0126 U	0.0125 U	0.0131 U	0.0122 U	0.0123 U	0.0122 U	0.0121 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U
Fluoranthene	0.107 U	0.105 U	0.104 U	0.109 U	0.101 U	0.102 U	0.102 U	0.101 U	0.103 U	0.104 U	0.103 U	0.107 U
Fluorene	0.0403 U	0.0420 U	0.0416 U	0.0438 U	0.0406 U	0.0409 U	0.0406 U	0.0402 U	0.0412 U	0.0415 U	0.0413 U	0.0429 U
Indeno(1,2,3-c,d)pyrene	0.0213 U	0.0210 U	0.0208 U	0.0219 U	0.0186 J	0.0205 U	0.0203 U	0.0201 U	0.0206 U	0.0207 U	0.0218 U	0.0215 U
Naphthalene	0.0128 U	0.0126 U	0.0125 U	0.0131 U	0.0113 J	0.0123 U	0.0122 U	0.0121 U	0.0124 U	0.0124 U	0.0124 U	0.0129 U
Phenanthrene	0.0213 U	0.0210 U	0.0208 U	0.0124 J	0.0148 J	0.0205 U	0.0203 U	0.0201 U	0.0206 U	0.0207 U	0.0206 U	0.0215 U
Pyrene	0.0213 U	0.0210 U	0.0208 U	0.0219 U	0.0203 U	0.0205 U	0.0203 U	0.0201 U	0.0206 U	0.0207 U	0.0206 U	0.0215 U
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	1050	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U
Copper	10.0 U	10.0 U	10.0 U	10.0 U	1000	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Lead	9.0 U	9.0 U	9.0 U	9.0 U	988	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U
Zinc	15.0 U	15.0 U	15.0 U	15.0 U	491	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-09242020	EB-09252020	EB-09292020	EB-09302020	EB-10012020	EB-10022020	EB-10062020	EB-10072020	EB-10072020K	EB-10082020	EB-10092020	EB-10132020	EB-10142020
Date	9/24/2020	9/25/2020	9/29/2020	9/30/2020	10/1/2020	10/2/2020	10/6/2020	10/7/2020	10/7/2020	10/8/2020	10/9/2020	10/13/2020	10/14/2020
2-Methylnaphthalene	0.0116 UJ	0.0119 U	0.0119 U	0.0127 U	0.0122 U	0.0121 U	0.0129 U	0.0126 U	0.0128 UJ	0.0237 J	0.0124 U	0.0127 U	0.0129 U
Acenaphthene	0.0289 UJ	0.0298 U	0.0298 U	0.0317 U	0.0305 U	0.0301 U	0.0323 U	0.0315 U	0.0319 UJ	0.0326 U	0.0310 U	0.0319 U	0.0322 U
Anthracene	0.0386 UJ	0.0397 U	0.0398 U	0.0423 U	0.0406 U	0.0402 U	0.0430 U	0.0419 U	0.0425 UJ	0.0435 U	0.0414 U	0.0425 U	0.0429 U
Benzo(a)anthracene	0.0386 UJ	0.0397 U	0.0398 U	0.0423 U	0.0406 U	0.0402 U	0.0430 U	0.0419 U	0.0425 UJ	0.0435 U	0.0414 U	0.0425 U	0.0429 U
Benzo(a)pyrene	0.0116 UJ	0.0119 U	0.0119 U	0.0127 U	0.0122 U	0.0121 U	0.0129 U	0.0126 U	0.0128 UJ	0.0131 U	0.0124 U	0.0127 U	0.0129 U
Benzo(b)fluoranthene	0.0386 UJ	0.0397 U	0.0398 U	0.0423 U	0.0406 U	0.0402 U	0.0430 U	0.0419 U	0.0425 UJ	0.0435 U	0.0414 U	0.0425 U	0.0429 U
Benzo(g,h,i)perylene	0.0193 UJ	0.0199 U	0.0199 U	0.0212 U	0.0203 U	0.0201 U	0.0215 U	0.0210 U	0.0213 UJ	0.0218 U	0.0207 U	0.0212 U	0.0215 U
Benzo(k)fluoranthene	0.0386 UJ	0.0397 U	0.0398 U	0.0423 U	0.0406 U	0.0402 U	0.0430 U	0.0419 U	0.0425 UJ	0.0435 U	0.0414 U	0.0425 U	0.0429 U
Chrysene	0.0386 UJ	0.0397 U	0.0398 U	0.0423 U	0.0406 U	0.0402 U	0.0430 U	0.0419 U	0.0425 UJ	0.0435 U	0.0414 U	0.0425 U	0.0429 U
Dibenz(a,h)anthracene	0.0116 UJ	0.0119 U	0.0119 U	0.0127 U	0.0122 U	0.0121 U	0.0129 U	0.0126 U	0.0128 UJ	0.0131 U	0.0124 U	0.0127 U	0.0129 U
Fluoranthene	0.0964 UJ	0.0993 U	0.0994 U	0.106 U	0.102 U	0.100 U	0.108 U	0.105 U	0.106 UJ	0.109 U	0.103 U	0.106 U	0.107 U
Fluorene	0.0386 UJ	0.0397 U	0.0398 U	0.0423 U	0.0406 U	0.0402 U	0.0430 U	0.0419 U	0.0425 UJ	0.0435 U	0.0414 U	0.0425 U	0.0429 U
Indeno(1,2,3-c,d)pyrene	0.0193 UJ	0.0199 U	0.0199 U	0.0212 U	0.0203 U	0.0201 U	0.0215 U	0.0210 U	0.0213 UJ	0.0218 U	0.0207 U	0.0212 U	0.0215 U
Naphthalene	0.0116 UJ	0.0119 U	0.0119 U	0.0127 U	0.0122 U	0.0121 U	0.0129 U	0.0126 U	0.0128 UJ	0.0467 J	0.0124 U	0.0127 U	0.0129 U
Phenanthrene	0.0193 UJ	0.0199 U	0.0199 U	0.0212 U	0.0203 U	0.0201 U	0.0215 U	0.0210 U	0.0213 UJ	0.0218 U	0.0207 U	0.0212 U	0.0215 U
Pyrene	0.0193 UJ	0.0199 U	0.0199 U	0.0212 U	0.0203 U	0.0201 U	0.0215 U	0.0210 U	0.0213 UJ	0.0218 U	0.0207 U	0.0212 U	0.0215 U
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U
Copper	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Lead	9.0 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U
Zinc	15.0 U	5.05 J	122 J	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	5.70 J	15.0 U	15.0 U	15.0 U	15.0 U

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-10152020	EB-10162020	EB-10202020	EB-10212020B	EB-10222020Q	EB-10222020A	EB-10232020	EB-10272020	EB-10282020D	EB-10282020E	EB-10292020	EB-10302020	EB-11032020	EB-11042020I
Date	10/15/2020	10/16/2020	10/20/2020	10/21/2020	10/22/2020	10/22/2020	10/23/2020	10/27/2020	10/28/2020	10/28/2020	10/29/2020	10/30/2020	11/3/2020	11/4/2020
2-Methylnaphthalene	0.0129 U	0.0121 U	0.0126 UJ	0.0121 UJ	0.0118 U	0.0130 UJ	0.0128 UJ	0.0126 U	0.0121 U	0.0127 U	0.0120 U	0.0131 U	0.0131 U	0.0125 UJ
Acenaphthene	0.0323 U	0.0301 U	0.0316 UJ	0.0303 UJ	0.0295 U	0.0325 UJ	0.0319 UJ	0.0315 U	0.0303 U	0.0317 U	0.0299 U	0.0327 U	0.0326 U	0.0312 UJ
Anthracene	0.0430 U	0.0402 U	0.0718 J	0.0404 UJ	0.0394 U	0.0433 UJ	0.0425 UJ	0.0196 J	0.0404 U	0.0422 U	0.0399 U	0.0199 J	0.0435 U	0.0417 UJ
Benzo(a)anthracene	0.0430 U	0.0402 U	0.109 J	0.0404 UJ	0.0394 U	0.0433 UJ	0.0425 UJ	0.0236 J	0.0404 U	0.0422 U	0.0399 U	0.0716 J	0.0435 U	0.0417 UJ
Benzo(a)pyrene	0.0129 U	0.00677 J	0.102 J	0.0121 UJ	0.0118 U	0.0130 UJ	0.0128 UJ	0.0106 J	0.0121 U	0.0127 U	0.0120 U	0.0313 J	0.0131 U	0.0125 UJ
Benzo(b)fluoranthene	0.0430 U	0.0402 U	0.115 J	0.0404 UJ	0.0394 U	0.0433 UJ	0.0425 UJ	0.0420 U	0.0404 U	0.0422 U	0.0399 U	0.0359 J	0.0435 U	0.0417 UJ
Benzo(g,h,i)perylene	0.0215 U	0.0157 J	0.109 J	0.0202 UJ	0.0197 U	0.0216 UJ	0.0213 UJ	0.0210 U	0.0202 U	0.0211 U	0.0199 U	0.0218 U	0.0218 U	0.0208 UJ
Benzo(k)fluoranthene	0.0430 U	0.0148 J	0.104 J	0.0404 UJ	0.0394 U	0.0433 UJ	0.0425 UJ	0.0420 U	0.0404 U	0.0422 U	0.0399 U	0.0180 J	0.0435 U	0.0417 UJ
Chrysene	0.0430 U	0.0402 U	0.102 J	0.0404 UJ	0.0394 U	0.0433 UJ	0.0425 UJ	0.0470 J	0.0404 U	0.0422 U	0.0399 U	0.166	0.0435 U	0.0417 UJ
Dibenz(a,h)anthracene	0.0129 U	0.0151 J	0.0957 J	0.0121 UJ	0.0118 U	0.0130 UJ	0.0128 UJ	0.0126 U	0.0121 U	0.0127 U	0.0120 U	0.0131 U	0.0131 U	0.0125 UJ
Fluoranthene	0.108 U	0.100 U	0.0986 J	0.101 UJ	0.0984 U	0.108 UJ	0.106 UJ	0.0462 J	0.101 U	0.106 U	0.0997 U	0.0721 J	0.109 U	0.104 UJ
Fluorene	0.0430 U	0.0402 U	0.0421 UJ	0.0404 UJ	0.0394 U	0.0433 UJ	0.0425 UJ	0.0420 U	0.0404 U	0.0422 U	0.0399 U	0.0437 U	0.0435 U	0.0417 UJ
Indeno(1,2,3-c,d)pyrene	0.0215 U	0.0168 J	0.120 J	0.0202 UJ	0.0197 U	0.0216 UJ	0.0213 UJ	0.0210 U	0.0202 U	0.0211 U	0.0199 U	0.0218 U	0.0218 U	0.0208 UJ
Naphthalene	0.0129 U	0.0121 U	0.0126 UJ	0.0121 UJ	0.0118 U	0.0130 UJ	0.0128 UJ	0.0126 U	0.0121 U	0.0127 U	0.0120 U	0.0131 U	0.0131 U	0.0125 UJ
Phenanthrene	0.0215 U	0.0201 U	0.0804 J	0.0202 UJ	0.0197 U	0.0216 UJ	0.0213 UJ	0.0581 J	0.0202 U	0.0211 U	0.0199 U	0.0660 J	0.0218 U	0.0208 UJ
Pyrene	0.0215 U	0.0201 U	0.0980 J	0.0202 UJ	0.0197 U	0.0216 UJ	0.0213 UJ	0.0453 J	0.0202 U	0.0211 U	0.0199 U	0.105 J	0.0218 U	0.0208 UJ
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U
Copper	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Lead	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U
Zinc	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	5.37 J	15.0 U	15.0 U

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-11042020J	EB-11052020	EB-11062020	EB-11172020	EB-11182020	EB-11192020	EB-11202020	EB-12012020	EB-12022020	EB-12032020	EB-12042020	EB-12152020	EB-12162020
Date	11/4/2020	11/5/2020	11/6/2020	11/17/2020	11/18/2020	11/19/2020	11/20/2020	12/1/2020	12/2/2020	12/3/2020	12/4/2020	12/15/2020	12/16/2020
2-Methylnaphthalene	0.0128 UJ	0.0128 UJ	0.0125 UJ	0.0129 U	0.0128 U	0.0122 UJ	0.0127 U	0.0123 U	0.0124 UJ	0.0117 U	0.0117 U	0.0132 U	0.0130 U
Acenaphthene	0.0320 UJ	0.0319 UJ	0.0311 UJ	0.0323 U	0.0320 U	0.0304 UJ	0.0318 U	0.0309 U	0.0309 UJ	0.0293 U	0.0293 U	0.0329 U	0.0325 U
Anthracene	0.0427 UJ	0.0426 UJ	0.0415 UJ	0.0431 U	0.0426 U	0.0406 UJ	0.0425 U	0.0411 U	0.0412 UJ	0.0390 U	0.0390 U	0.0438 U	0.0434 U
Benzo(a)anthracene	0.0427 UJ	0.0426 UJ	0.0415 UJ	0.0431 U	0.0426 U	0.0406 UJ	0.0425 U	0.0411 U	0.0412 UJ	0.0390 U	0.0390 U	0.0306 J	0.0434 U
Benzo(a)pyrene	0.0128 UJ	0.0128 UJ	0.0125 UJ	0.0129 U	0.0128 U	0.0122 UJ	0.0127 U	0.0123 U	0.0124 UJ	0.0117 U	0.0117 U	0.0144 J	0.0130 U
Benzo(b)fluoranthene	0.0427 UJ	0.0426 UJ	0.0415 UJ	0.0431 U	0.0426 U	0.0406 UJ	0.0425 U	0.0411 U	0.0412 UJ	0.0390 U	0.0390 U	0.0574 J	0.0434 U
Benzo(g,h,i)perylene	0.0214 UJ	0.0213 UJ	0.0208 UJ	0.0215 U	0.0213 U	0.0203 UJ	0.0212 U	0.0206 U	0.0206 UJ	0.0195 U	0.0195 U	0.0363 J	0.0217 U
Benzo(k)fluoranthene	0.0427 UJ	0.0426 UJ	0.0415 UJ	0.0431 U	0.0426 U	0.0406 UJ	0.0425 U	0.0411 U	0.0412 UJ	0.0390 U	0.0390 U	0.0523 J	0.0434 U
Chrysene	0.0427 UJ	0.0426 UJ	0.0415 UJ	0.0431 U	0.0426 U	0.0406 UJ	0.0425 U	0.0411 U	0.0412 UJ	0.0390 U	0.0390 U	0.0464 J	0.0434 U
Dibenz(a,h)anthracene	0.0128 UJ	0.0128 UJ	0.0125 UJ	0.0129 U	0.0128 U	0.0122 UJ	0.0127 U	0.0123 U	0.0124 UJ	0.0117 U	0.0117 U	0.0314 J	0.0130 U
Fluoranthene	0.107 UJ	0.106 UJ	0.104 UJ	0.108 U	0.107 U	0.101 UJ	0.106 U	0.103 U	0.103 UJ	0.0975 U	0.0976 U	0.110 U	0.108 U
Fluorene	0.0427 UJ	0.0426 UJ	0.0415 UJ	0.0431 U	0.0426 U	0.0406 UJ	0.0425 U	0.0411 U	0.0412 UJ	0.0390 U	0.0390 U	0.0438 U	0.0434 U
Indeno(1,2,3-c,d)pyrene	0.0214 UJ	0.0213 UJ	0.0208 UJ	0.0215 U	0.0213 U	0.0203 UJ	0.0212 U	0.0206 U	0.0206 UJ	0.0195 U	0.0195 U	0.0415 J	0.0217 U
Naphthalene	0.0128 UJ	0.0128 UJ	0.0125 UJ	0.0129 U	0.0128 U	0.0122 UJ	0.0127 U	0.0123 U	0.0124 UJ	0.0117 U	0.0177 J	0.0132 U	0.0130 U
Phenanthrene	0.0214 UJ	0.0213 UJ	0.0208 UJ	0.0112 J	0.0213 U	0.0203 UJ	0.0212 U	0.0206 U	0.0206 UJ	0.0195 U	0.0195 U	0.0219 U	0.0217 U
Pyrene	0.0214 UJ	0.0213 UJ	0.0208 UJ	0.0215 U	0.0213 U	0.0203 UJ	0.0212 U	0.0206 U	0.0206 UJ	0.0195 U	0.0195 U	0.0291 J	0.0217 U
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U
Copper	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Lead	9.00 U	9.00 U	9.00 U	2.89 J	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U
Zinc	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-01052021	EB-01062021	EB-01072021	EB-01082021	EB-01122021	EB-01132021	EB-01152021	EB-01192021	EB-01202021	EB-01212021	EB-01222021	EB-02022021	EB-02032021	EB-02042021
Date	1/5/2020	1/6/2021	1/7/2021	1/8/2021	1/12/2021	1/13/2021	1/15/2021	1/19/2021	1/20/2021	1/21/2021	1/22/2021	2/2/2021	2/3/2021	2/4/2021
2-Methylnaphthalene	0.0119 U	0.0122 UJ	0.0118 U	0.0125 U	0.0120 UJ	0.0122 U	0.0191 J	0.0119 U	0.0124 U	0.0124 U	0.0125 U	0.0118 U	0.0119 U	0.0120 U
Acenaphthene	0.0297 U	0.0305 UJ	0.0295 U	0.0314 U	0.0299 UJ	0.0304 U	0.0302 UJ	0.0298 U	0.0309 U	0.0311 UJ	0.0311 UJ	0.0295 U	0.0297 U	0.0300 U
Anthracene	0.0395 U	0.0407 UJ	0.0393 U	0.0418 U	0.0399 UJ	0.0405 U	0.0403 UJ	0.0397 U	0.0412 U	0.0415 U	0.0415 U	0.0394 U	0.0396 U	0.0400 U
Benzo(a)anthracene	0.0395 U	0.0407 UJ	0.0393 U	0.0418 U	0.0399 UJ	0.0405 U	0.0403 UJ	0.0397 U	0.0412 U	0.0415 UJ	0.0415 UJ	0.0394 U	0.0396 U	0.0400 U
Benzo(a)pyrene	0.0119 U	0.0122 UJ	0.0118 U	0.0125 U	0.0120 UJ	0.0122 U	0.0121 UJ	0.0119 U	0.0124 U	0.0124UJ	0.0125 UJ	0.0118 U	0.0119 U	0.0120 U
Benzo(b)fluoranthene	0.0395 U	0.0407 UJ	0.0393 U	0.0418 U	0.0399 UJ	0.0405 U	0.0403 UJ	0.0397 U	0.0412 U	0.0415 U	0.0415 U	0.0394 U	0.0396 U	0.0400 U
Benzo(g,h,i)perylene	0.0198 U	0.0203 UJ	0.0197 U	0.0209 U	0.0200 UJ	0.0203 U	0.0202 UJ	0.0199 U	0.0206 U	0.0207 U	0.0208 U	0.0197 U	0.0198 U	0.0400 U
Benzo(k)fluoranthene	0.0395 U	0.0407 UJ	0.0393 U	0.0418 U	0.0399 UJ	0.0405 U	0.0403 UJ	0.0397 U	0.0412 U	0.0415 U	0.0415 U	0.0394 U	0.0396 U	0.0400 U
Chrysene	0.0395 U	0.0407 UJ	0.0393 U	0.0418 U	0.0399 UJ	0.0405 U	0.0403 UJ	0.0397 U	0.0412 U	0.0415 UJ	0.0415 UJ	0.0394 U	0.0396 U	0.0400 U
Dibenz(a,h)anthracene	0.0119 U	0.0122 UJ	0.0118 U	0.0125 U	0.0120 UJ	0.0122 U	0.0121 UJ	0.0119 U	0.0124 U	0.0124 U	0.0125 U	0.0118 U	0.0119 U	0.0120 U
Fluoranthene	0.0989 U	0.102 UJ	0.0984 U	0.105 U	0.0998 UJ	0.101 U	0.101 UJ	0.0994 U	0.103 U	0.104 UJ	0.104 UJ	0.0985 U	0.0990 U	0.100 U
Fluorene	0.0395 U	0.0407 UJ	0.0393 U	0.0418 U	0.0399 UJ	0.0405 U	0.0403 UJ	0.0397 U	0.0412 U	0.0415 U	0.0415 U	0.0394 U	0.0396 U	0.0400 U
Indeno(1,2,3-c,d)pyrene	0.0198 U	0.0203 UJ	0.0197 U	0.0209 U	0.0200 UJ	0.0203 U	0.0202 UJ	0.0199 U	0.0206 U	0.0207 U	0.0208 U	0.0197 U	0.0198 U	0.0200 U
Naphthalene	0.0119 U	0.102 UJ	0.0118 U	0.0125 U	0.0120 UJ	0.0122 U	0.0379 J	0.0119 U	0.0124 U	0.0124 U	0.0125 U	0.0118 U	0.0119 U	0.0120 U
Phenanthrene	0.0989 U	0.0203 UJ	0.0984 U	0.0209 U	0.0200 UJ	0.0203 U	0.0202 UJ	0.0199 U	0.0206 U	0.0207 UJ	0.0208 UJ	0.0197 U	0.0198 U	0.0200 U
Pyrene	0.0198 U	0.0203 UJ	0.0197 U	0.0209 U	0.00856 J	0.0203 U	0.0202 UJ	0.0199 U	0.0206 U	0.0207 U	0.0208 U	0.0197 U	0.0198 U	0.0200 U
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U
Copper	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Lead	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U
Zinc	15.0 U	15.0 U	15.0 U	15.0U	15.0 U	15.0 U	15.0 U	4.83 J	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-02052021	EB-02092021	EB-02102021	EB-02112021	EB-02122021	EB-02172021A	EB-02172021B	EB-02182021	EB-02192021	EB-02252021	EB-02262021	EB-03022021	EB-03032021
Date	2/5/2021	2/9/2021	2/10/2021	2/11/2021	2/12/2021	2/17/2021	2/17/2021	2/18/2021	2/19/2021	2/25/2021	2/26/2021	3/2/2021	3/3/2021
2-Methylnaphthalene	0.0123 U	0.0120 U	0.0120 UJ	0.0117 U	0.0128 UJ	0.0127 U	0.0121 U	0.0128 UJ	0.0134 UJ	0.0118 U	0.0129 U	0.0124 UJ	0.0122 U
Acenaphthene	0.0308 U	0.03 U	0.0300 UJ	0.0292 U	0.0320 UJ	0.0316 U	0.0301 U	0.0321 UJ	0.0334 UJ	0.0295 U	0.0322 U	0.0310 UJ	0.0306 U
Anthracene	0.0411 U	0.0400 U	0.0401 UJ	0.0389 U	0.0426 UJ	0.0422 U	0.0402 U	0.0428 UJ	0.0446 UJ	0.0393 U	0.0430 U	0.0413 UJ	0.0408 U
Benzo(a)anthracene	0.0411 U	0.0400 U	0.0401 UJ	0.0389 U	0.0426 UJ	0.0422 U	0.0402 U	0.0428 UJ	0.0446 UJ	0.0393 U	0.0430 U	0.0413 UJ	0.0408 U
Benzo(a)pyrene	0.0123 U	0.0120 U	0.0120 UJ	0.0117 U	0.0128 UJ	0.0127 U	0.0121 U	0.0128 UJ	0.0134 UJ	0.0118 U	0.0129 U	0.0124 UJ	0.0122 U
Benzo(b)fluoranthene	0.0411 U	0.0400 U	0.0401 UJ	0.0389 U	0.0206 J	0.0422 U	0.0402 U	0.0428 UJ	0.0446 UJ	0.0393 U	0.0430 U	0.0413 UJ	0.0408 U
Benzo(g,h,i)perylene	0.0205 U	0.0200 U	0.0200 UJ	0.0195 U	0.0134 J	0.0211 UJ	0.0201 UJ	0.0214 UJ	0.0223 UJ	0.0197 U	0.0215 U	0.0207 UJ	0.0204 U
Benzo(k)fluoranthene	0.0411 U	0.0400 U	0.0401 UJ	0.0389 U	0.0154 J	0.0422 U	0.0402 U	0.0428 UJ	0.0446 UJ	0.0393 U	0.0430 U	0.0413 UJ	0.0408 U
Chrysene	0.0411 U	0.0400 U	0.0401 UJ	0.0389 U	0.0187 J	0.0422 U	0.0402 U	0.0428 UJ	0.0446 UJ	0.0393 U	0.0430 U	0.0413 UJ	0.0408 U
Dibenz(a,h)anthracene	0.0123 U	0.0120 U	0.0120 UJ	0.0117 U	0.0106 J	0.0127 U	0.0121 U	0.0128 UJ	0.0134 UJ	0.0118 U	0.0129 U	0.0124 UJ	0.0122 U
Fluoranthene	0.103 U	0.0999 U	0.100 UJ	0.0973 U	0.107 UJ	0.105 U	0.100 U	0.107 UJ	0.111 UJ	0.0983 U	0.107 U	0.103 UJ	0.102 U
Fluorene	0.0411 U	0.0400 U	0.0401 UJ	0.0389 U	0.0426 UJ	0.0422 U	0.0402 U	0.0428 UJ	0.0446 UJ	0.0393 U	0.0430 U	0.0413 UJ	0.0408 U
Indeno(1,2,3-c,d)pyrene	0.0205 U	0.0200 U	0.0200 UJ	0.0195 U	0.0213 UJ	0.0211 UJ	0.0201 UJ	0.0214 UJ	0.0223 UJ	0.0197 U	0.0215 U	0.0207 UJ	0.0204 U
Naphthalene	0.0123 U	0.0120 U	0.0120 UJ	0.0117 U	0.0128 UJ	0.0127 U	0.0121 U	0.0128 UJ	0.0134 UJ	0.00563 J	0.0152 J	0.0124 UJ	0.0122 U
Phenanthrene	0.0205 U	0.0200 U	0.0200 UJ	0.0195 U	0.0213 UJ	0.0211 U	0.0201 U	0.0214 UJ	0.0223 Uj	0.0197 U	0.0215 U	0.0207 UJ	0.0204 U
Pyrene	0.0205 U	0.0200 U	0.0200 UJ	0.0195 U	0.00882 J	0.0211 U	0.0201 U	0.0214 UJ	0.0223 UJ	0.0197 U	0.0215 U	0.0207 UJ	0.0204 U
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U
Copper	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Lead	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U
Zinc	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	11.6 J	15.0 U	15.0 U

TABLE B-1
EQUIPMENT BLANK ANALYTICAL RESULTS (JANUARY 2020 - APRIL 2021 SAMPLING EVENT)

EB ID	EB-03042021	EB-03052021	EB-03092021	EB-03102021	EB-03112021	EB-03302021	EB-03312021	EB-04022021	EB-04062021	EB-04072021	EB-04082021
Date	3/4/2021	3/5/2021	3/9/2021	3/10/2021	3/11/2021	3/30/2021	3/31/2021	4/2/2021	4/2/2021	4/7/2021	4/8/2021
2-Methylnaphthalene	0.0120 U	0.0116 U	0.0119 U	0.0125 U	0.0125 U	0.00942 J	0.0124 UJ	0.0123 UJ	0.0121 UJ	0.0120 UJ	0.0130 U
Acenaphthene	0.0299 U	0.0291 U	0.0297 U	0.0312 U	0.0313 U	0.0299 U	0.0309 UJ	0.0308 UJ	0.0302 UJ	0.0299 UJ	0.0325 U
Anthracene	0.0399 U	0.0388 U	0.0396 U	0.0416 U	0.0418 U	0.0399 U	0.0412 UJ	0.0410 UJ	0.0402 UJ	0.0399 UJ	0.0433 U
Benzo(a)anthracene	0.0399 U	0.0388 U	0.0396 U	0.0416 U	0.0418 U	0.0399 U	0.0412 UJ	0.0410 UJ	0.0402 UJ	0.0399 UJ	0.0433 U
Benzo(a)pyrene	0.0120 U	0.0116 U	0.0119 U	0.0125 U	0.0125 U	0.0120 U	0.0412 UJ	0.0123 UJ	0.0121 UJ	0.0120 UJ	0.0130 U
Benzo(b)fluoranthene	0.0399 U	0.0388 U	0.0396 U	0.0416 U	0.0418 U	0.0399 U	0.0412 UJ	0.0410 UJ	0.0402 UJ	0.0399 UJ	0.0433 U
Benzo(g,h,i)perylene	0.0200 U	0.0194 U	0.0198 U	0.0208 U	0.0209 U	0.0199 U	0.0206 UJ	0.0205 UJ	0.0201 UJ	0.0199 UJ	0.0217 U
Benzo(k)fluoranthene	0.0399 U	0.0388 U	0.0396 U	0.0416 U	0.0418 U	0.0399 U	0.0412 UJ	0.0410 UJ	0.0402 UJ	0.0399 UJ	0.0433 U
Chrysene	0.0399 U	0.0388 U	0.0396 U	0.0416 U	0.0418 U	0.0399 U	0.0412 UJ	0.0410 UJ	0.0402 UJ	0.0399 UJ	0.0433 U
Dibenz(a,h)anthracene	0.0120 U	0.0116 U	0.0119 U	0.0125 U	0.0125 U	0.0120 U	0.0124 UJ	0.0123 UJ	0.0121 UJ	0.0120 UJ	0.0130 U
Fluoranthene	0.0998 U	0.0970 U	0.0989 U	0.104 U	0.104 U	0.0997 U	0.103 UJ	0.103 UJ	0.101 UJ	0.0997 UJ	0.108 U
Fluorene	0.0399 U	0.0388 U	0.0396 U	0.0416 U	0.0418 U	0.0399 U	0.0412 UJ	0.0410 UJ	0.0402 UJ	0.0399 UJ	0.0433 U
Indeno(1,2,3-c,d)pyrene	0.0200 U	0.0194 U	0.0198 U	0.0208 U	0.0209 U	0.0199 U	0.0206 UJ	0.0205 UJ	0.0201 UJ	0.0199 UJ	0.0217 U
Naphthalene	0.0120 U	0.0116 U	0.0119 U	0.0125 U	0.0125 U	0.0371 J	0.0124 UJ	0.0123 UJ	0.0121 UJ	0.0120 UJ	0.0130 U
Phenanthrene	0.0200 U	0.0194 U	0.0198 U	0.0208 U	0.0209 U	0.0199 U	0.0206 UJ	0.0205 UJ	0.0201 UJ	0.0199 UJ	0.0217 U
Pyrene	0.0200 U	0.0194 U	0.0198 U	0.0208 U	0.0209 U	0.0199 U	0.0206 UJ	0.0205 UJ	0.0201 UJ	0.0199 UJ	0.0217 U
Antimony	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 UJ	12.0 UJ	12.0 UJ
Copper	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 UJ	10.0 UJ	10.0 UJ
Lead	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 U	9.00 UJ	9.00 UJ	9.00 UJ
Zinc	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 UJ	15.0 UJ	15.0 UJ

ATTACHMENT 1

JANUARY 2020 TO APRIL 2021 PARCEL REPORTS WITH FIELD DATA AND LABORATORY ANALYTICAL REPORTS

(PROVIDED AS SEPARATE FILES)